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Drogobetski et al.

(10) **Patent No.: US 9,430,498 B2**
(45) **Date of Patent: Aug. 30, 2016**

(54) **METHODS AND SYSTEMS FOR GENERATING A DIGITAL CELEBRITY MAP TOUR GUIDE**

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(73) Assignee: **Velvet Ropes, Inc.**, Marina Del Ray, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/960,370**

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(65) **Prior Publication Data**

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Related U.S. Application Data

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(51) **Int. Cl.**

G06F 17/30	(2006.01)
G06F 3/0484	(2013.01)
H04L 29/08	(2006.01)
H04L 29/06	(2006.01)

(52) **U.S. Cl.**

CPC ***G06F 17/30241*** (2013.01); ***G06F 3/04842*** (2013.01); ***G06F 17/3087*** (2013.01); ***G06F 17/30554*** (2013.01); ***G06F 17/30867*** (2013.01); ***H04L 67/141*** (2013.01); ***H04L 67/18*** (2013.01); ***H04L 67/42*** (2013.01)

(58) **Field of Classification Search**

CPC G06F 17/30554; G06F 17/30867; G06F 17/3087; G06F 17/30241; G06F 3/04842; H04L 67/141; H04L 67/42; H04L 67/18

See application file for complete search history.

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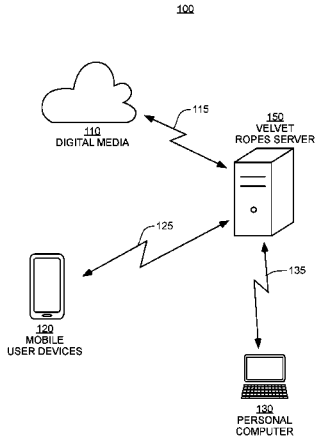
(Continued)

Primary Examiner — Jerrah Edwards
Assistant Examiner — Tamara Weber
(74) *Attorney, Agent, or Firm* — American Patent Agency PC; Daniar Hussain

(57) **ABSTRACT**

Systems and methods of creating a tour on a digital celebrity map are disclosed, including steps to receive a user geolocation; determine a map area around the user geolocation; retrieve, from a data repository, celebrity geolocations within the map area, wherein each celebrity geolocation is associated with at least one named celebrity, and wherein each of the celebrity geolocations is associated with a celebrity geolocation type selected from the group consisting of celebrity real estate property, celebrity sighting location, and celebrity hotspot; transmit the celebrity geolocations to the computing appliance, for display on the digital celebrity map; receive a request to generate a tour to the celebrity geolocations, wherein the tour starts from the user geolocation; and in response to the user request, generate for display on the digital celebrity map, the tour to the celebrity geolocations.

20 Claims, 35 Drawing Sheets



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2010/0241723	A1*	9/2010	Dornbush	H04L 67/306 709/207
2011/0214050	A1*	9/2011	Stambaugh	G06F 3/04817 715/234
2013/0122937	A1*	5/2013	Meyer	G06Q 30/0259 455/456.3

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GeoQuestGames. "Celebrity GeoSpotter," iPhone Application, available at: https://itunes.apple.com/us/app/celebrity-geospotter/id361436230?mt=8 Accessed on Nov. 23, 2015.

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Fig. 1

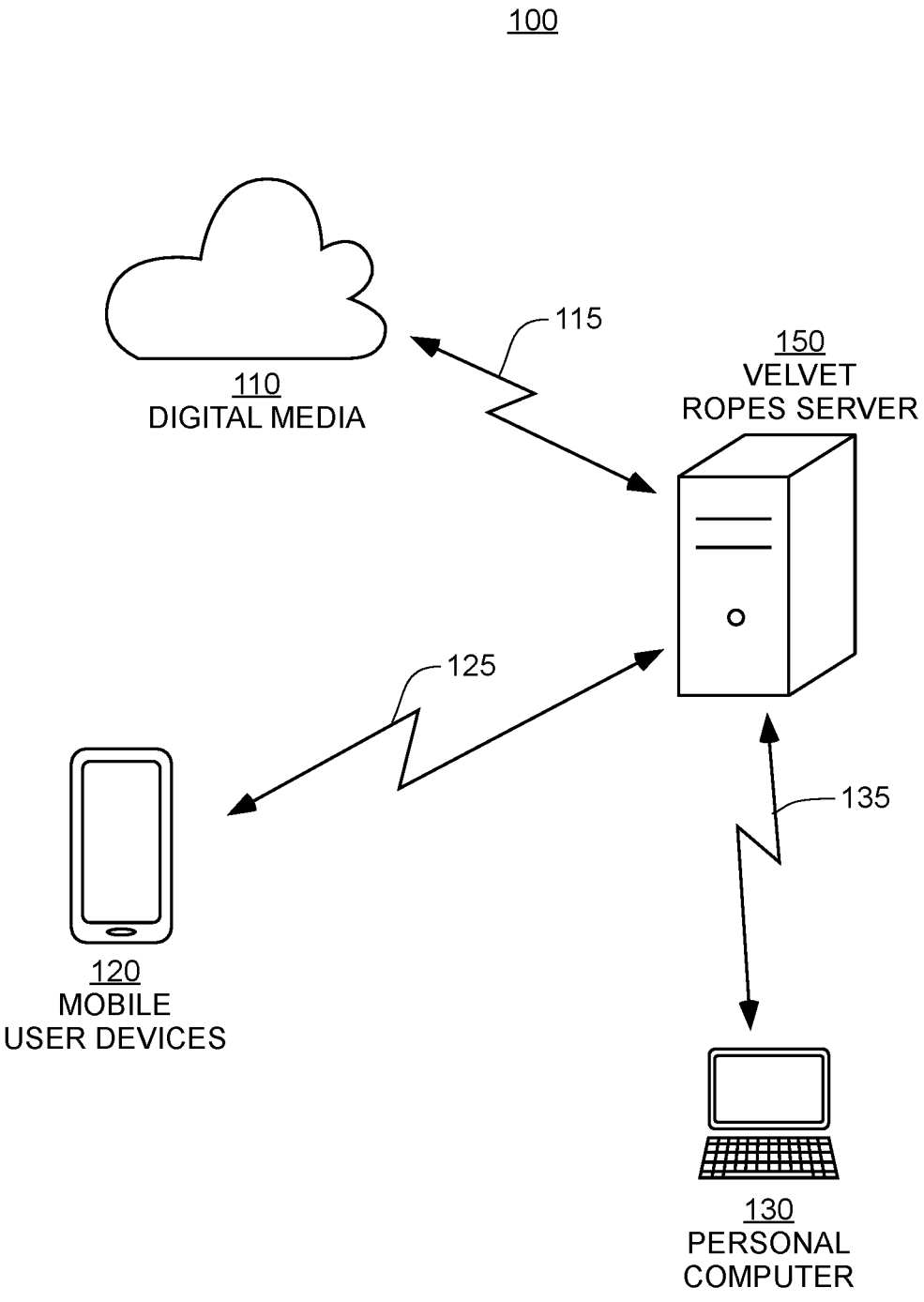

100
110
DIGITAL MEDIA
115
150
VELVET
ROPES SERVER
125
135
120
MOBILE
USER DEVICES
130
PERSONAL
COMPUTER

Fig. 2

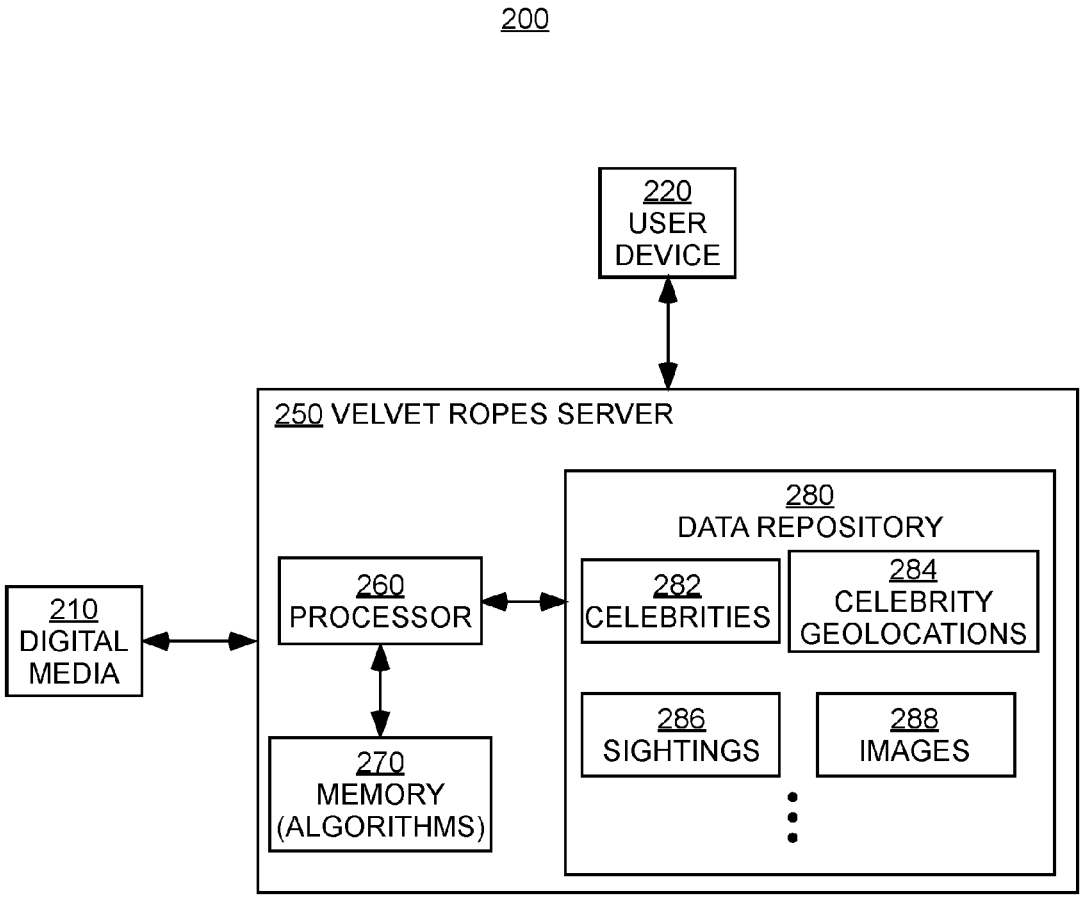

200
220
USER
DEVICE
250 VELVET ROPES SERVER
280
DATA REPOSITORY
260
PROCESSOR
282
CELEBRITIES
284
CELEBRITY
GEOLOCATIONS
210
DIGITAL
MEDIA
286
SIGHTINGS
288
IMAGES
270
MEMORY
(ALGORITHMS)

Fig. 3

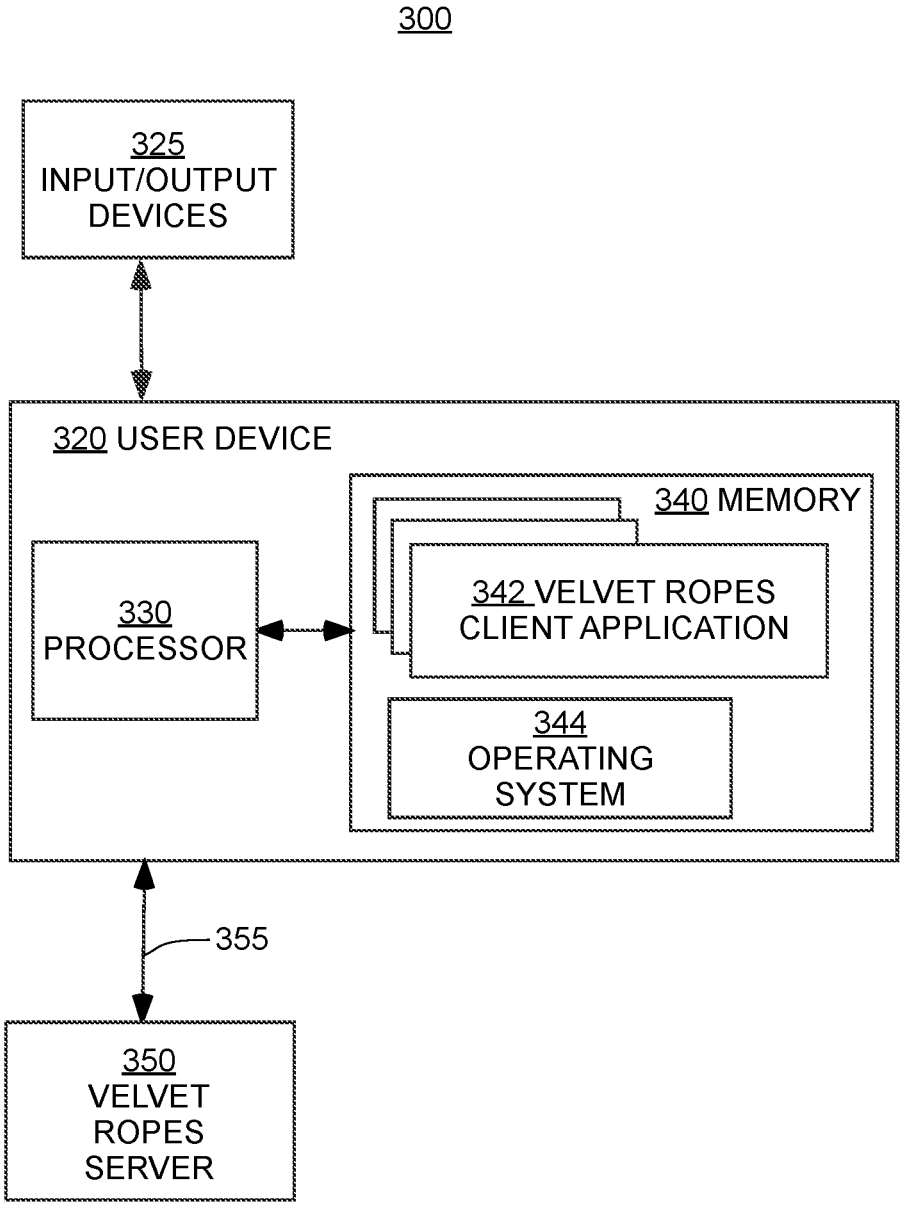

300
325
INPUT/OUTPUT
DEVICES
320 USER DEVICE
340 MEMORY
342 VELVET ROPES
CLIENT APPLICATION
330
PROCESSOR
344
OPERATING
SYSTEM
355
350
VELVET
ROPES
SERVER

Fig. 4

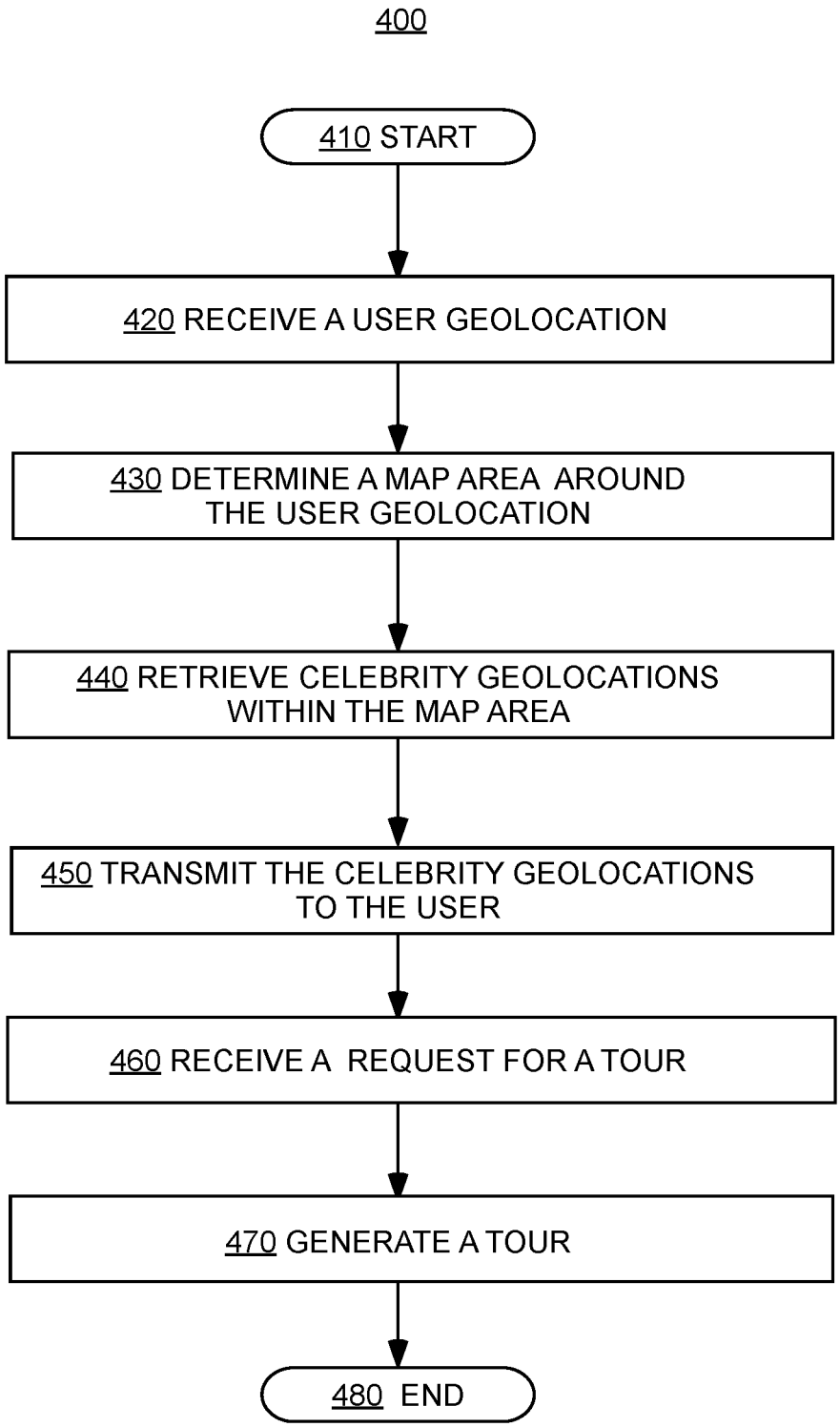

400
410 START
420 RECEIVE A USER GEOLOCATION
430 DETERMINE A MAP AREA AROUND THE USER GEOLOCATION
440 RETRIEVE CELEBRITY GEOLOCATIONS WITHIN THE MAP AREA
450 TRANSMIT THE CELEBRITY GEOLOCATIONS TO THE USER
460 RECEIVE A REQUEST FOR A TOUR
470 GENERATE A TOUR
480 END

Fig. 5

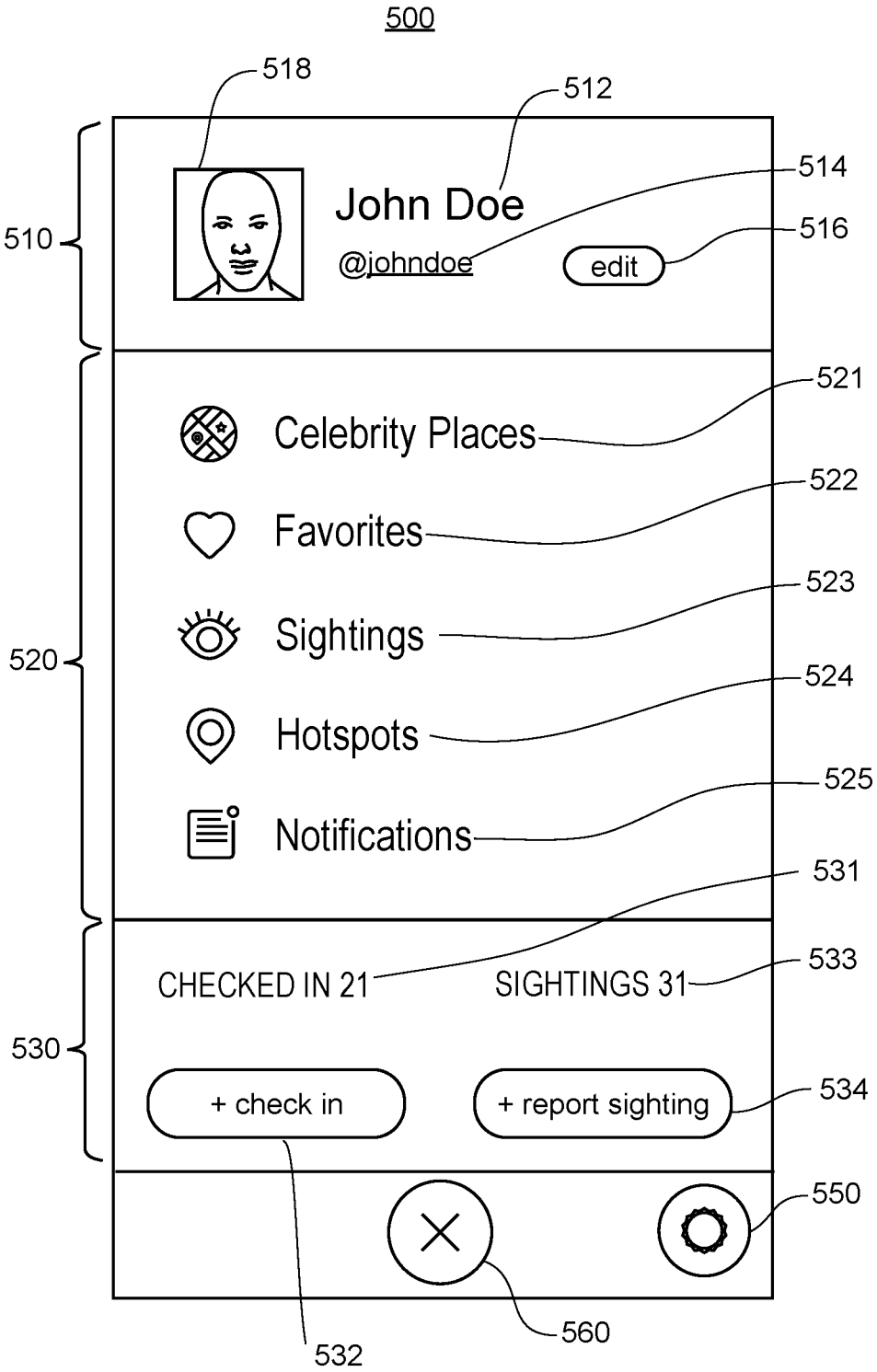

500
518
512
514
John Doe
@johndoe
edit
516
510
521
Celebrity Places
522
Favorites
523
Sightings
520
524
Hotspots
525
Notifications
531
CHECKED IN 21
SIGHTINGS 31
533
530
+ check in
+ report sighting
534
550
560
532

Fig. 6

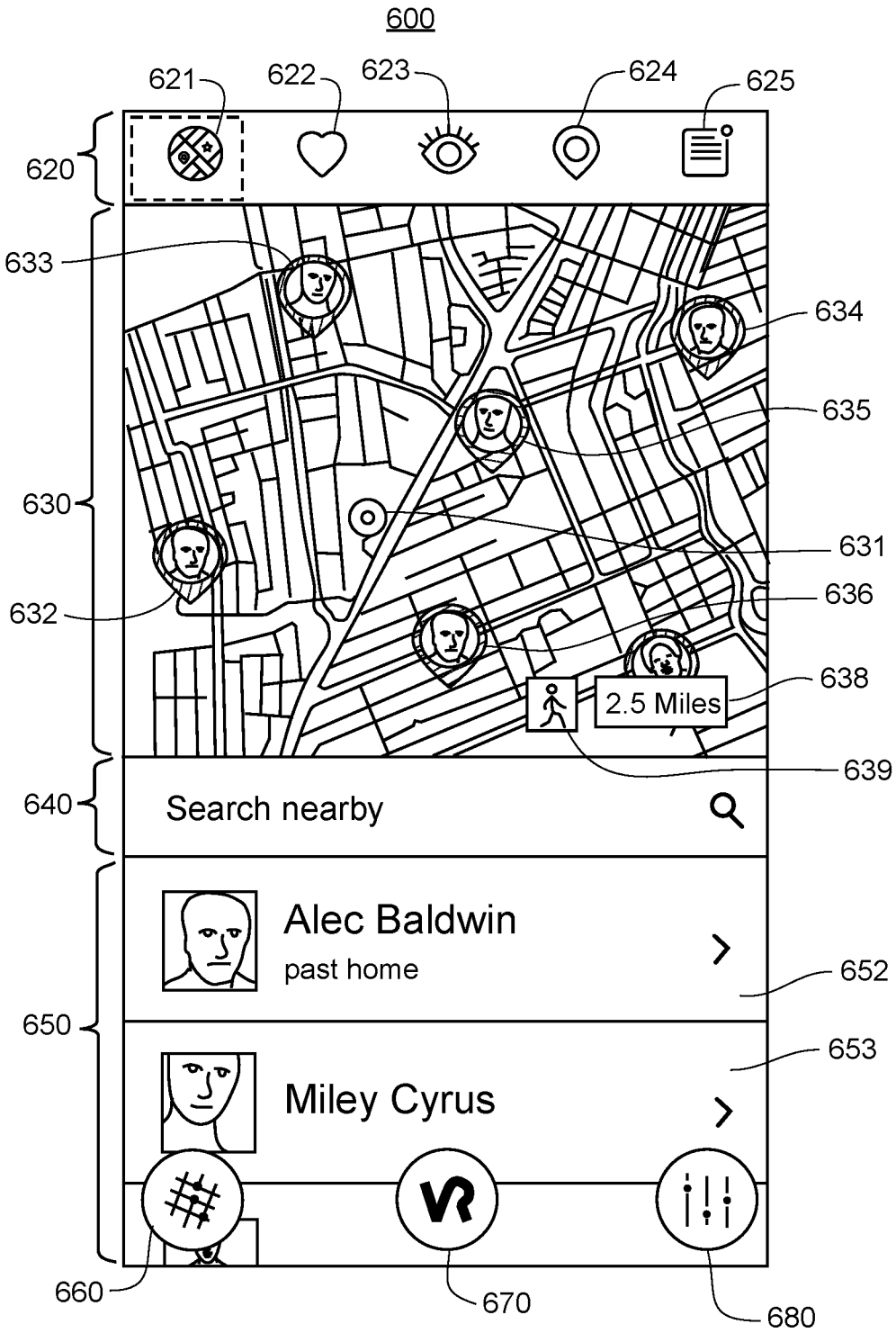

600
621
622
623
624
625
620
633
634
635
630
631
632
636
638
2.5 Miles
639
640
Search nearby
Alec Baldwin
past home
652
650
653
Miley Cyrus
660
670
680

Fig. 7

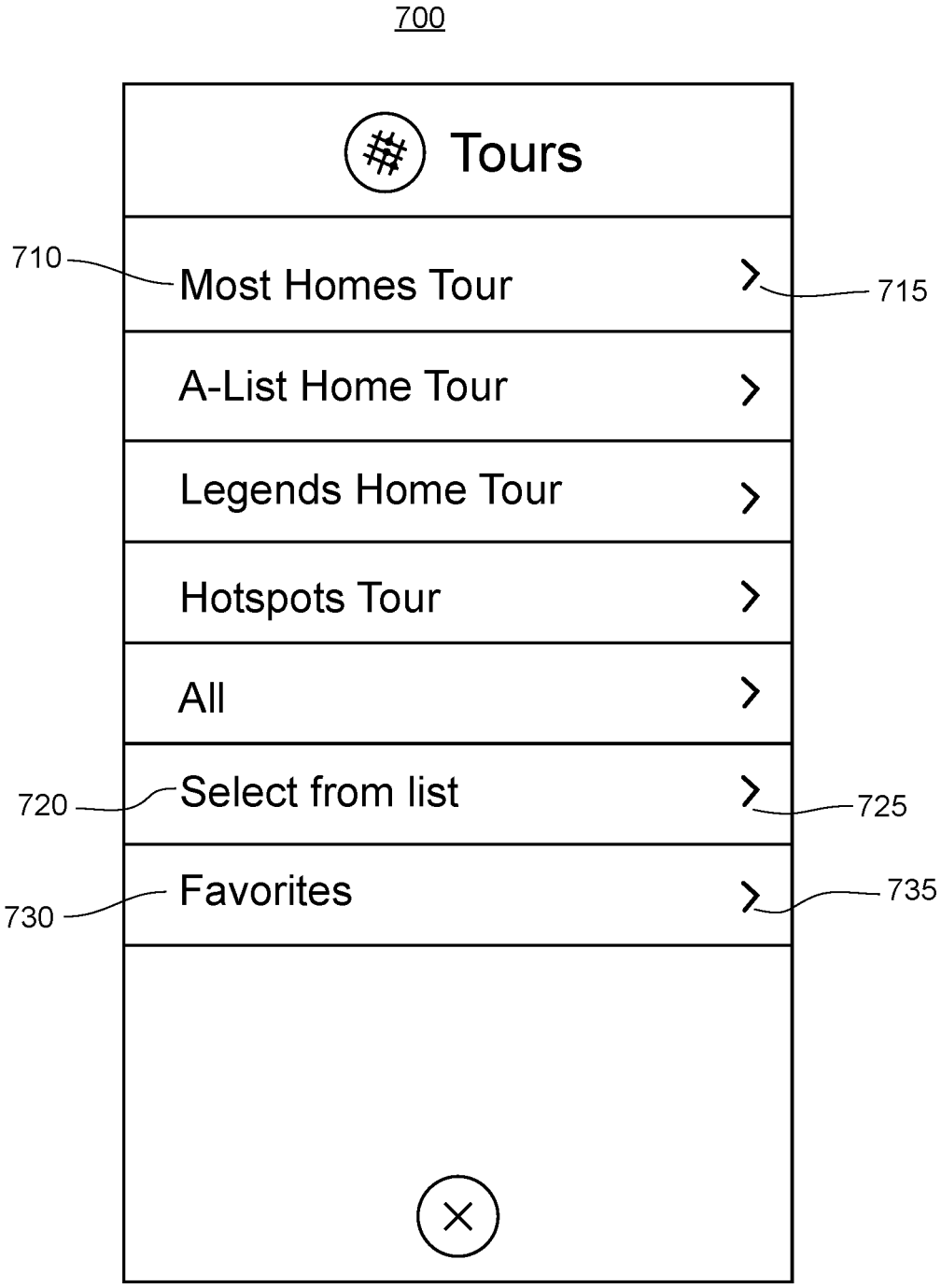

700
Tours
710
Most Homes Tour
715
A-List Home Tour
Legends Home Tour
Hotspots Tour
All
720
Select from list
725
730
Favorites
735

Fig. 8

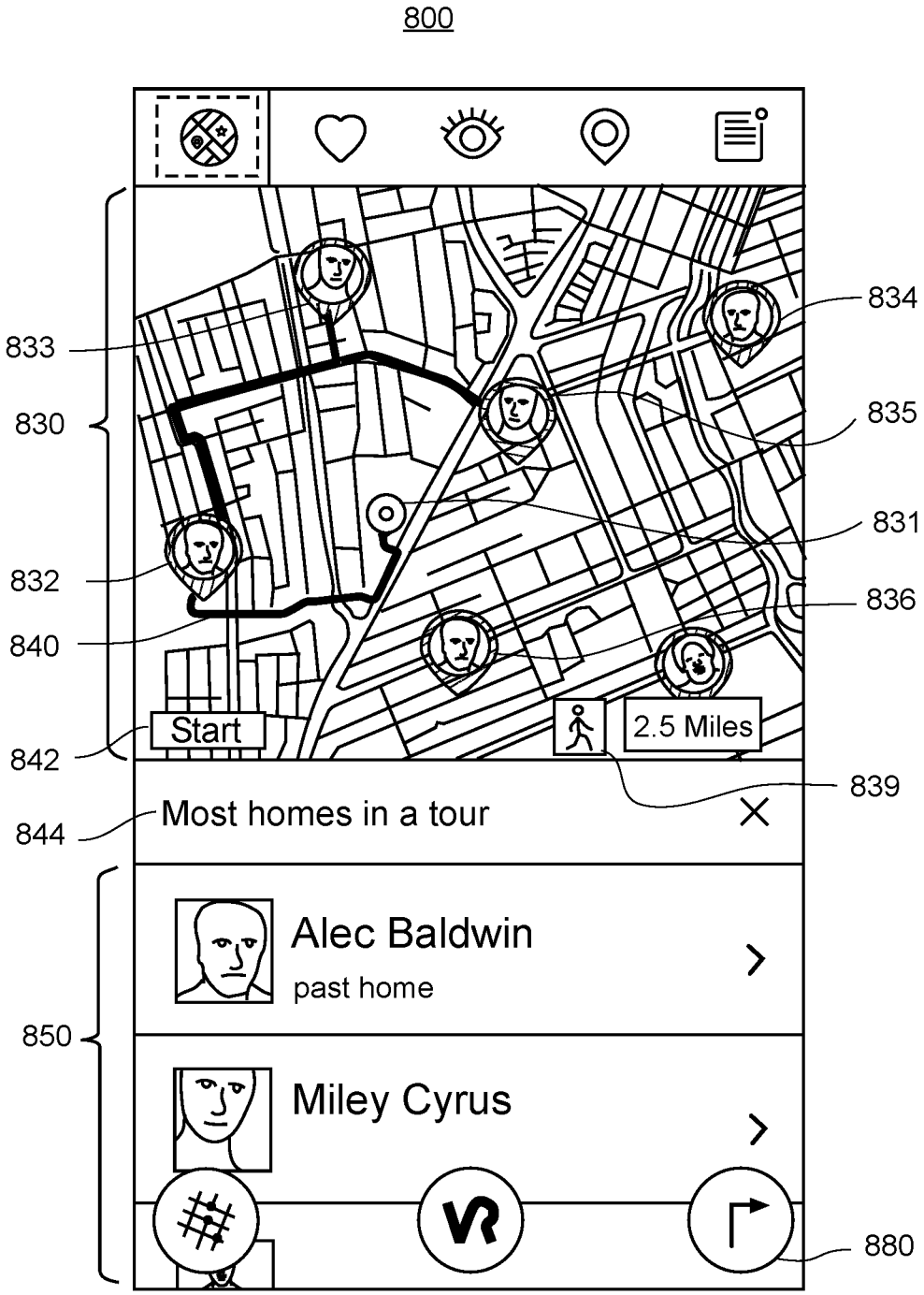

800
833
830
834
835
831
832
836
840
Start
2.5 Miles
842
839
844
Most homes in a tour
Alec Baldwin
past home
850
Miley Cyrus
880

Fig. 9

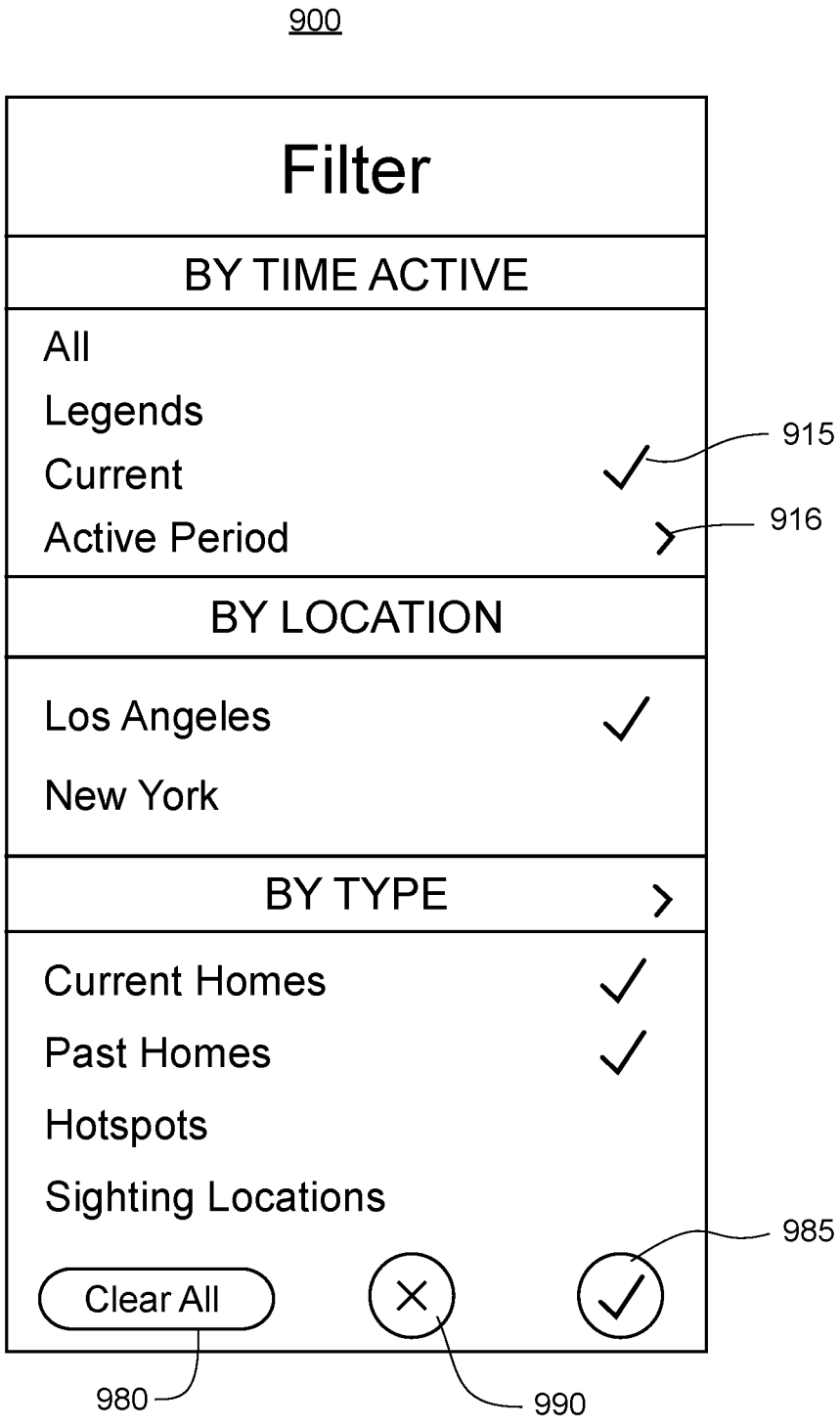

900
Filter
BY TIME ACTIVE
All
Legends
Current
Active Period
915
916
BY LOCATION
Los Angeles
New York
BY TYPE
Current Homes
Past Homes
Hotspots
Sighting Locations
985
Clear All
980
990

Fig. 10

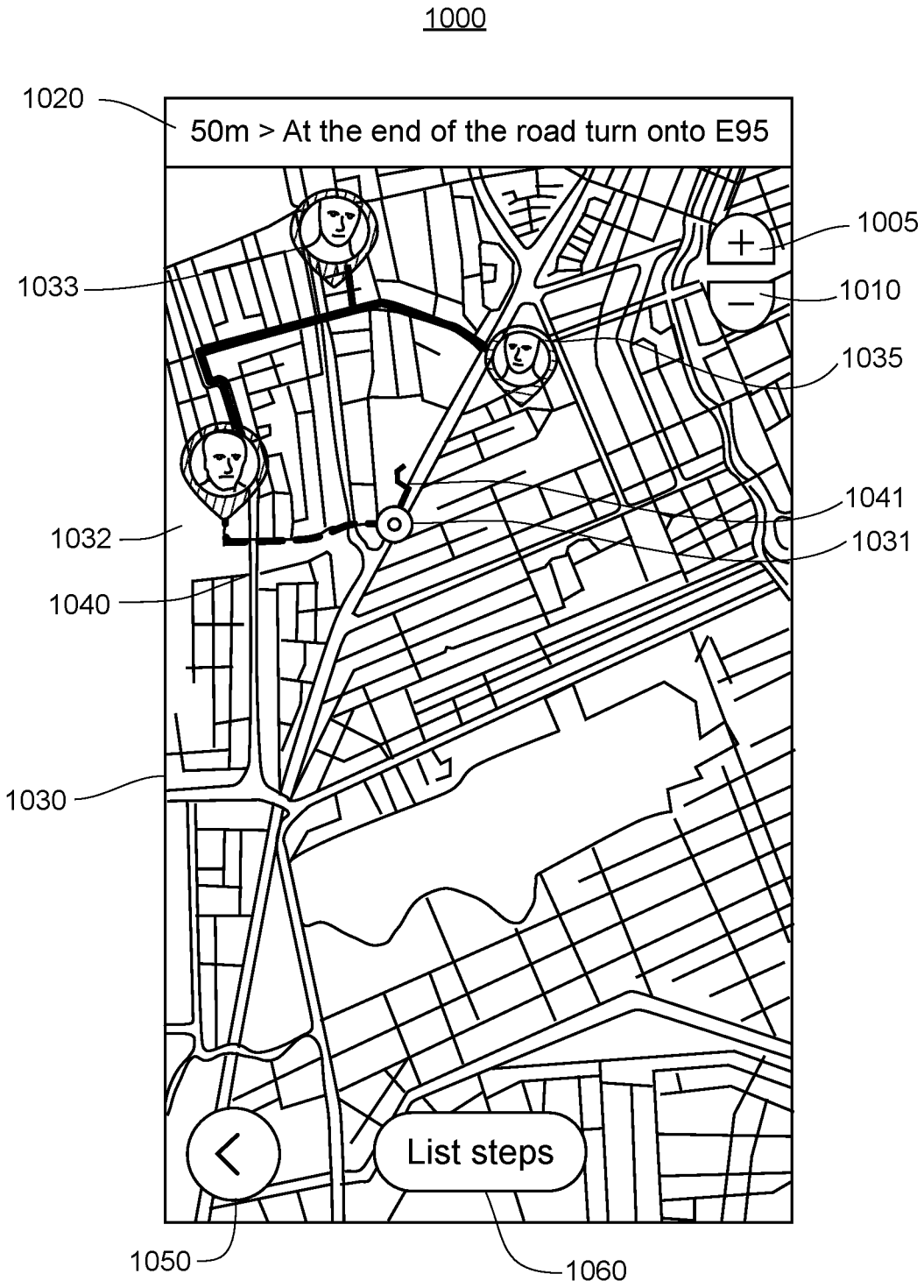

1000
1020
50m > At the end of the road turn onto E95
1005
1033
1010
1035
1041
1032
1031
1040
1030
List steps
1050
1060

Fig. 11

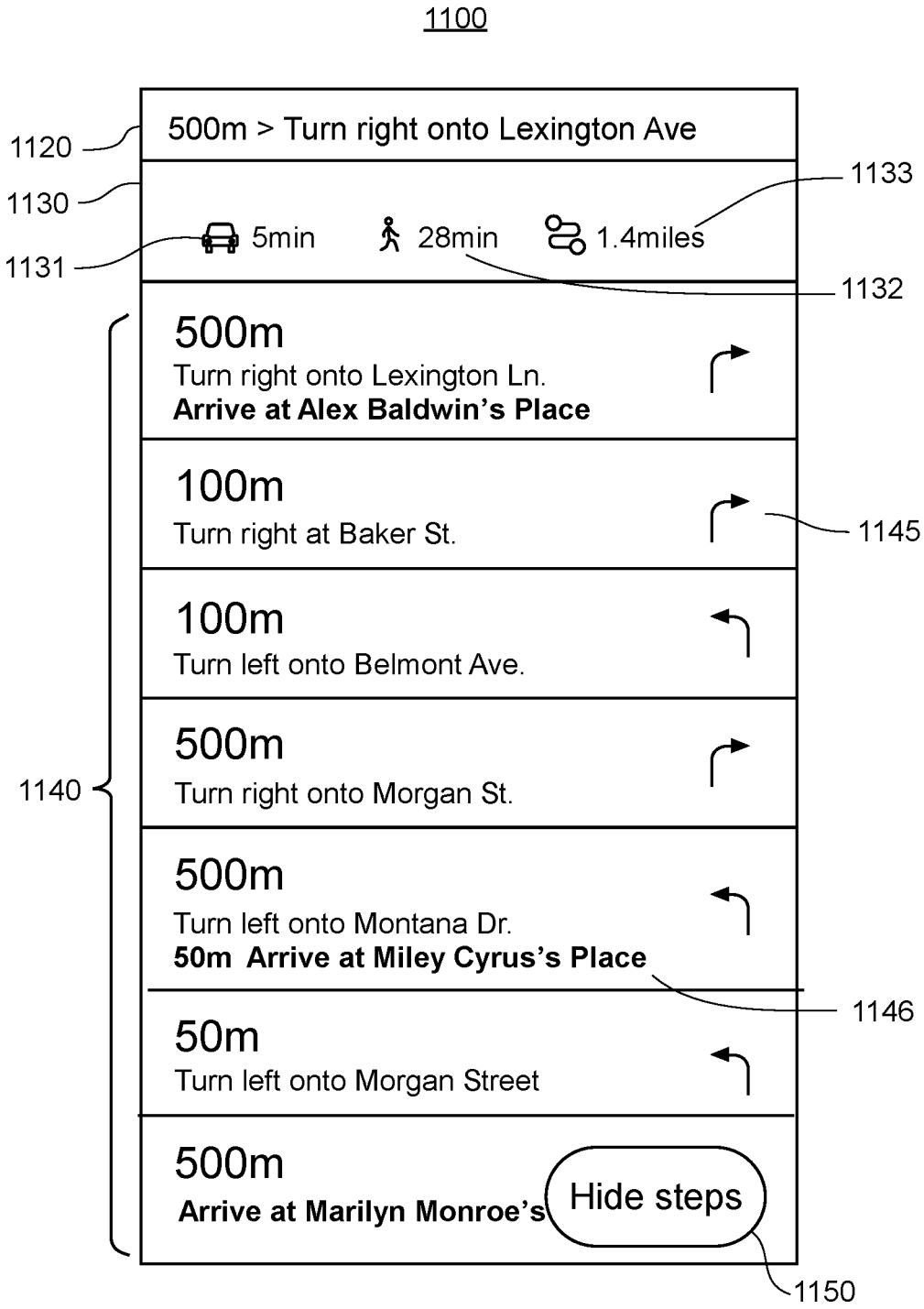

1100
500m > Turn right onto Lexington Ave
1120
1130
1131
5min
28min
1.4miles
1133
1132
500m
Turn right onto Lexington Ln.
Arrive at Alex Baldwin's Place
100m
Turn right at Baker St.
1145
100m
Turn left onto Belmont Ave.
500m
Turn right onto Morgan St.
1140
500m
Turn left onto Montana Dr.
50m Arrive at Miley Cyrus's Place
1146
50m
Turn left onto Morgan Street
500m
Arrive at Marilyn Monroe's
Hide steps
1150

Fig. 12A

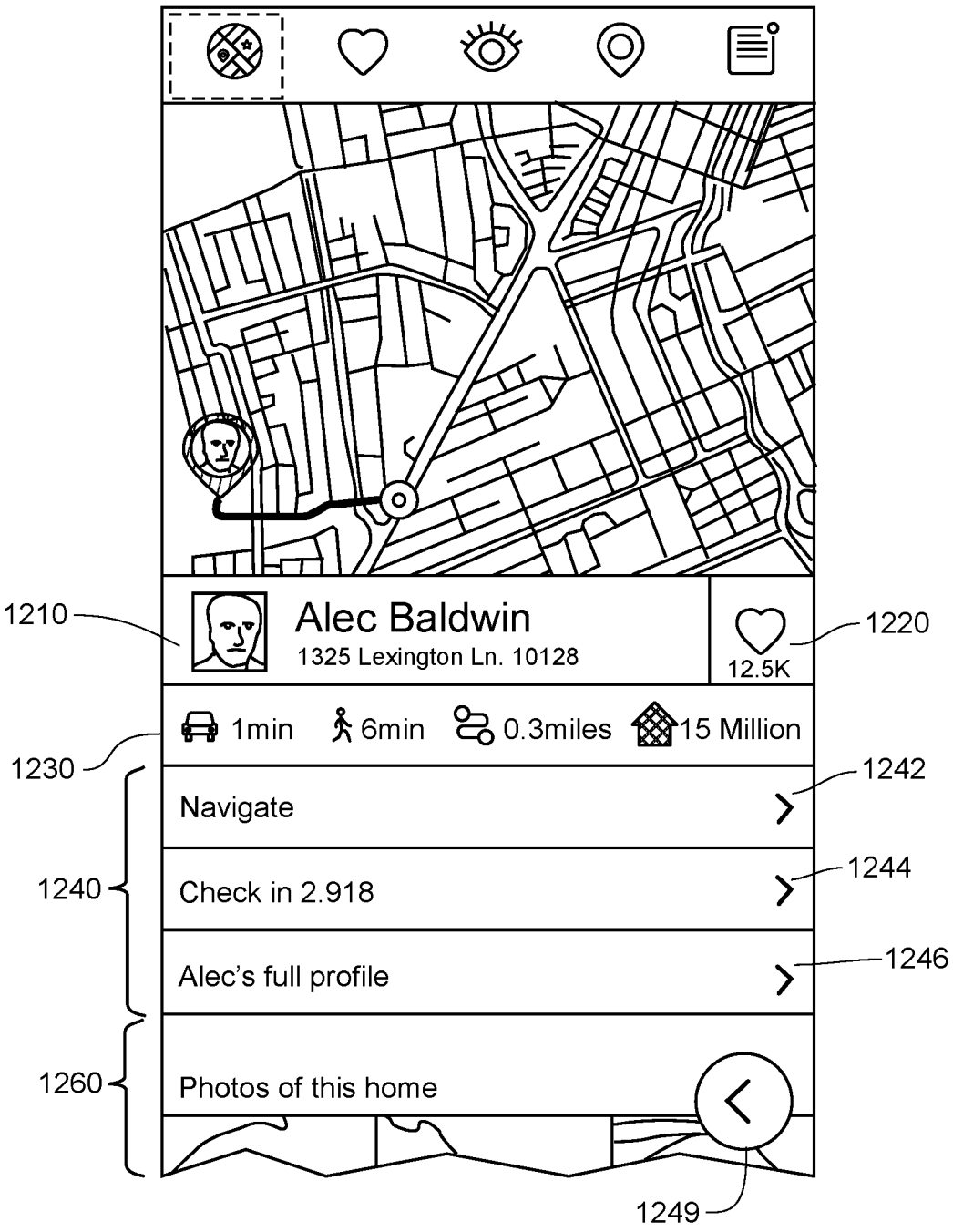

1200
1210
Alec Baldwin
1325 Lexington Ln. 10128
12.5K
1220
1min
6min
0.3miles
15 Million
1230
1242
Navigate
1240
1244
Check in 2.918
1246
Alec's full profile
1260
Photos of this home
1249

Fig. 12B

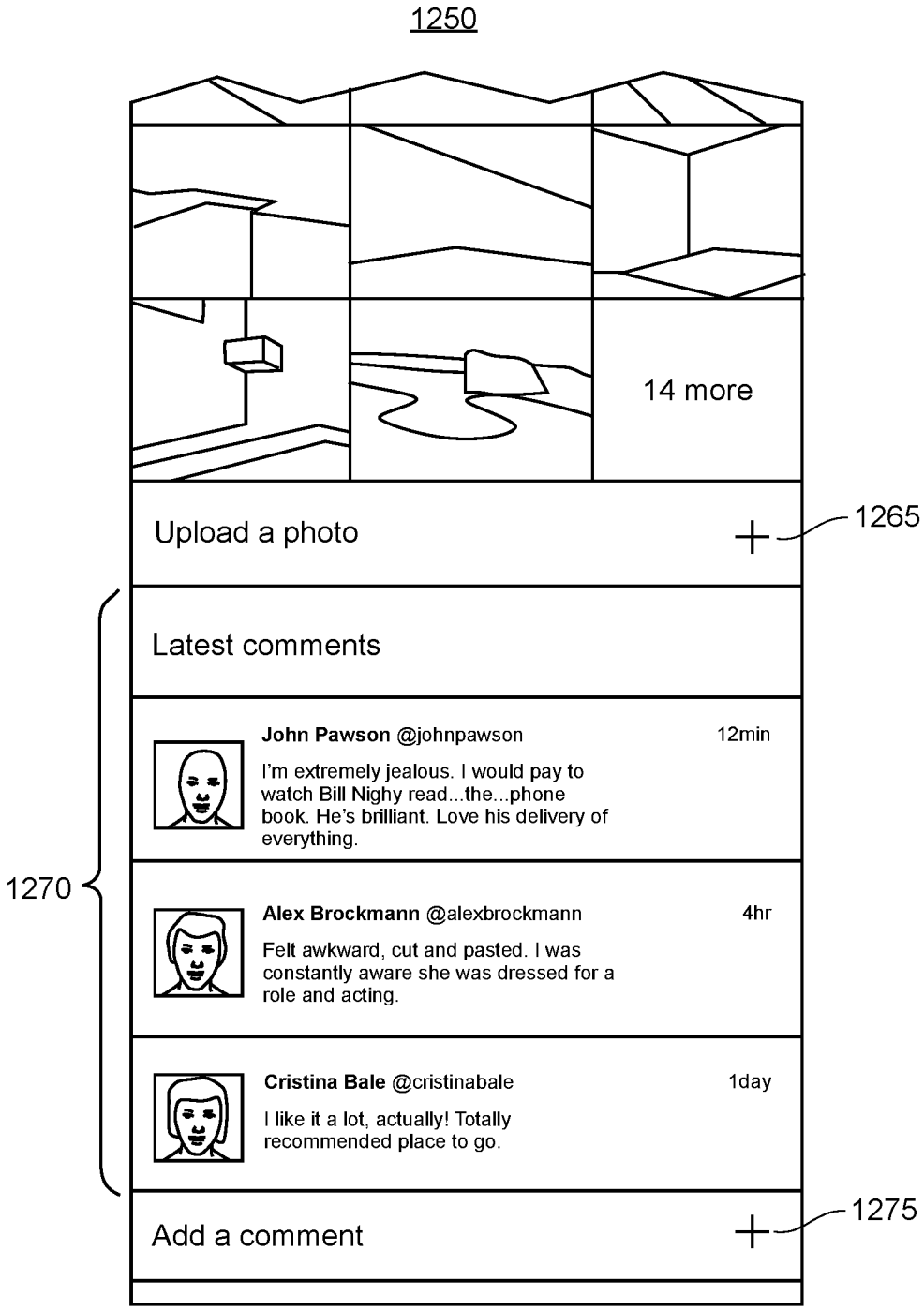

1250
14 more
Upload a photo
1265
Latest comments
John Pawson @johnpawson
12min
I'm extremely jealous. I would pay to watch Bill Nighy read...the...phone book. He's brilliant. Love his delivery of everything.
Alex Brockmann @alexbrockmann
4hr
Felt awkward, cut and pasted. I was constantly aware she was dressed for a role and acting.
Cristina Bale @cristinabale
1day
I like it a lot, actually! Totally recommended place to go.
1270
Add a comment
1275

Fig. 13

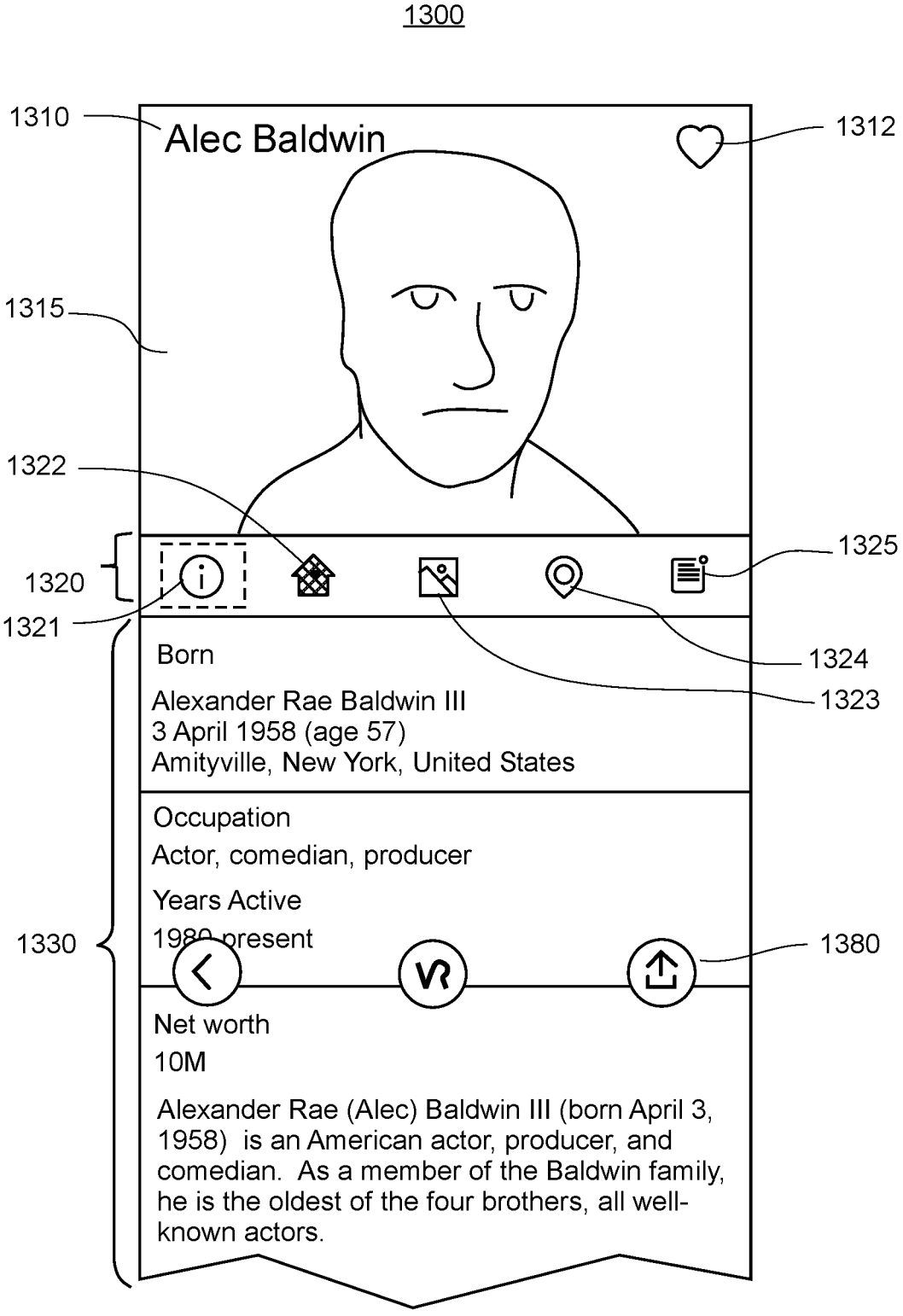

1300
1310
Alec Baldwin
1312
1315
1322
1320
1325
1321
1324
1323
Born
Alexander Rae Baldwin III
3 April 1958 (age 57)
Amityville, New York, United States
Occupation
Actor, comedian, producer
Years Active
1980-present
1330
1380
Net worth
10M
Alexander Rae (Alec) Baldwin III (born April 3, 1958) is an American actor, producer, and comedian. As a member of the Baldwin family, he is the oldest of the four brothers, all well-known actors.

Fig. 14

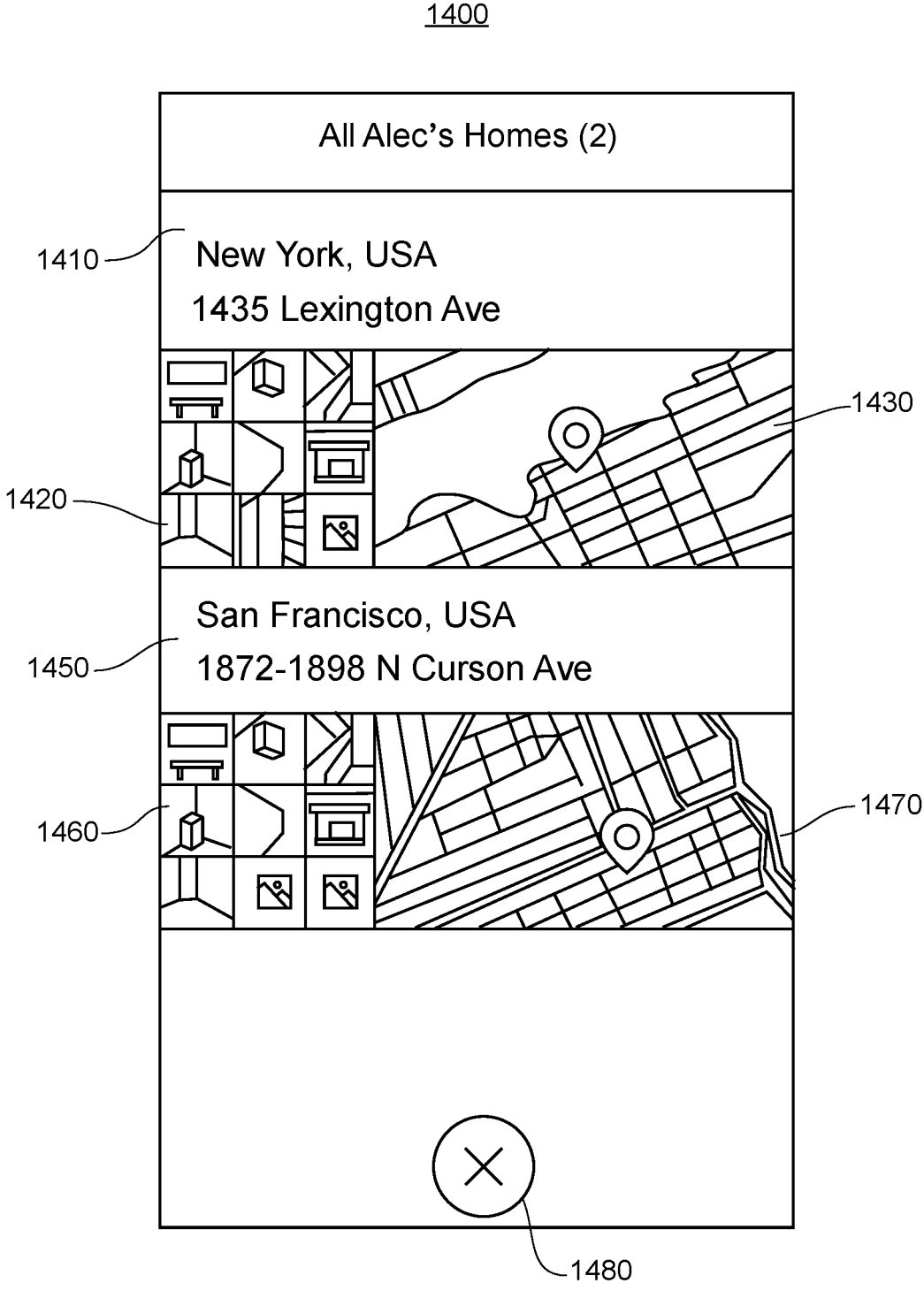

1400
All Alec's Homes (2)
1410
New York, USA
1435 Lexington Ave
1430
1420
San Francisco, USA
1450
1872-1898 N Curson Ave
1460
1470
1480

Fig. 15

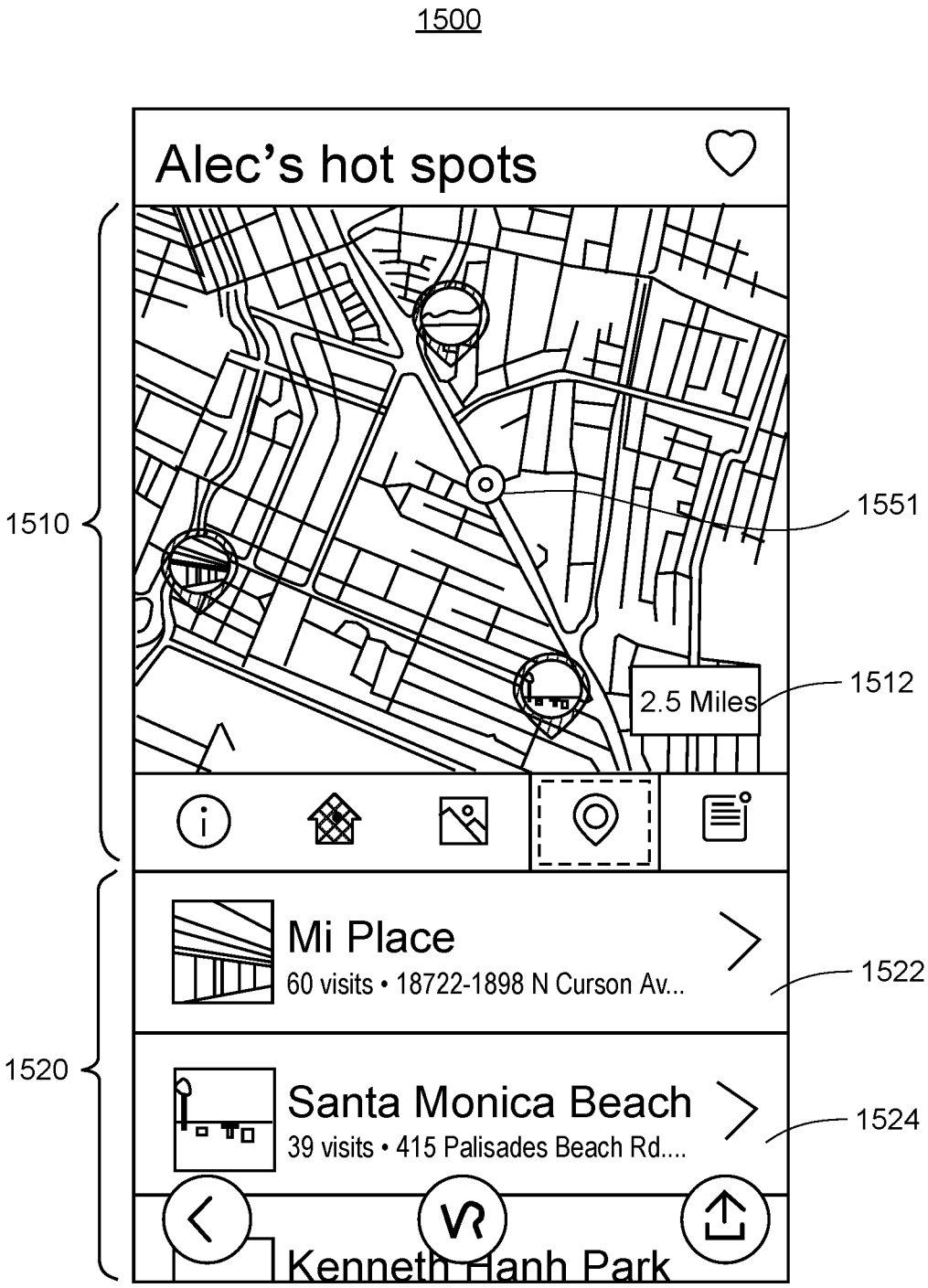

1500
Alec's hot spots
1510
1551
2.5 Miles
1512
1520
Mi Place
60 visits • 18722-1898 N Curson Av...
1522
Santa Monica Beach
39 visits • 415 Palisades Beach Rd....
1524
Kenneth Hahn Park

Fig. 16

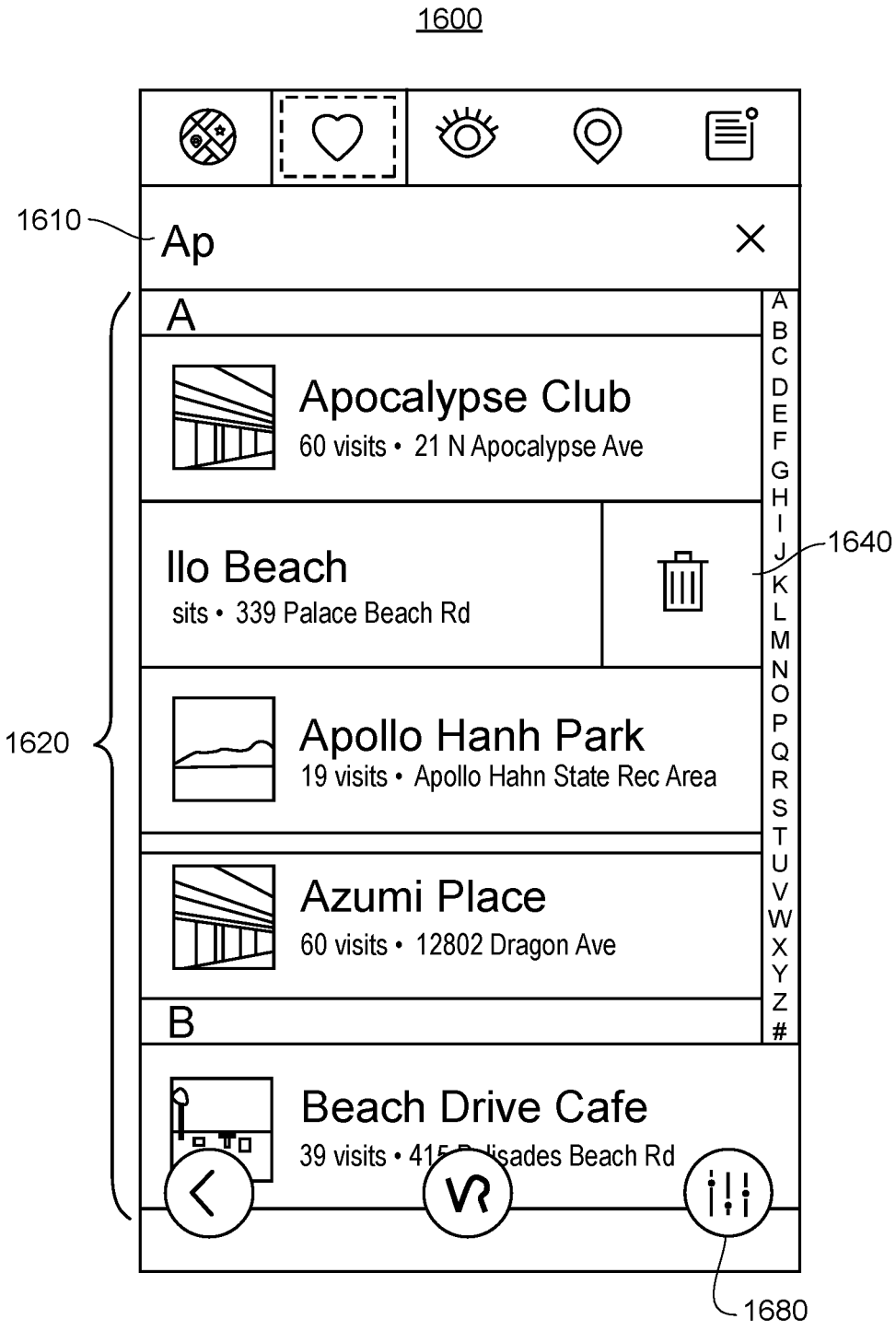

1600
1610
Ap
A
Apocalypse Club
60 visits • 21 N Apocalypse Ave
llo Beach
sits • 339 Palace Beach Rd
1640
Apollo Hanh Park
19 visits • Apollo Hahn State Rec Area
1620
Azumi Place
60 visits • 12802 Dragon Ave
B
Beach Drive Cafe
39 visits • 415 Palisades Beach Rd
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #
1680

Fig. 17

1700

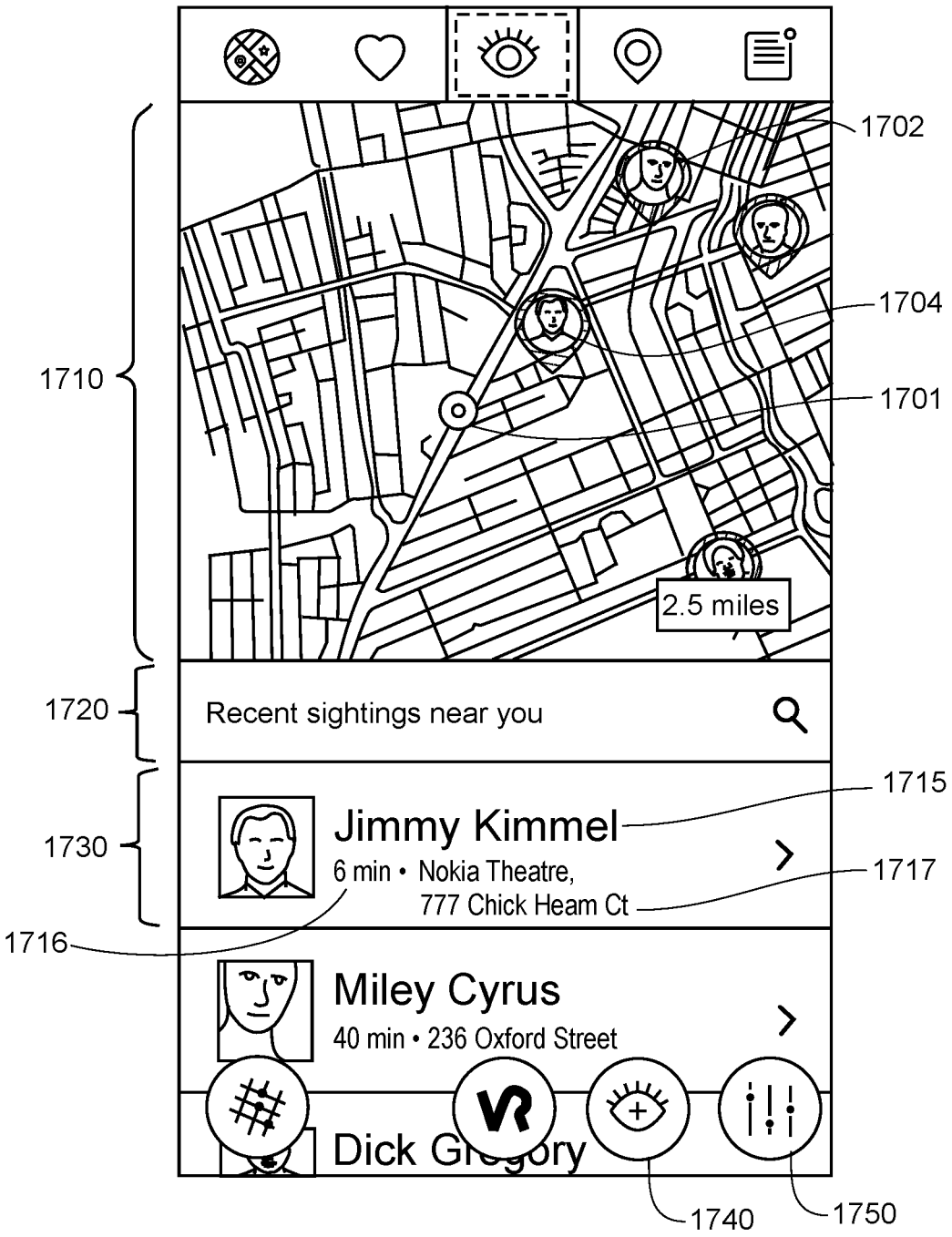

1702
1704
1710
1701
2.5 miles
1720
Recent sightings near you
1715
1730
Jimmy Kimmel
6 min • Nokia Theatre,
777 Chick Heam Ct
1717
1716
Miley Cyrus
40 min • 236 Oxford Street
Dick Gregory
1740
1750

Fig. 18

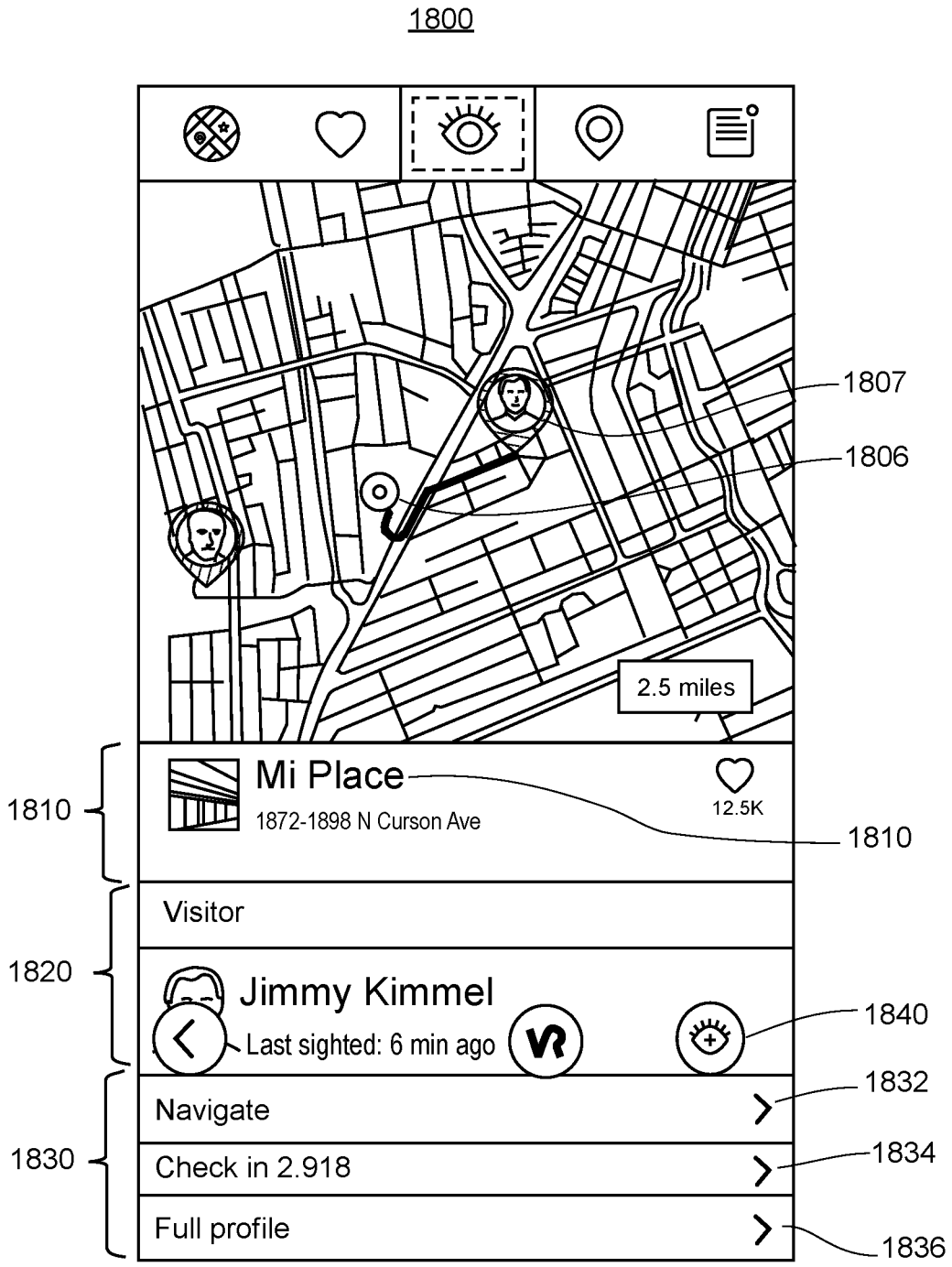

1800
1807
1806
2.5 miles
Mi Place
1872-1898 N Curson Ave
12.5K
1810
1810
Visitor
1820
Jimmy Kimmel
Last sighted: 6 min ago
1840
1832
Navigate
1830
Check in 2.918
1834
Full profile
1836

Fig. 19A

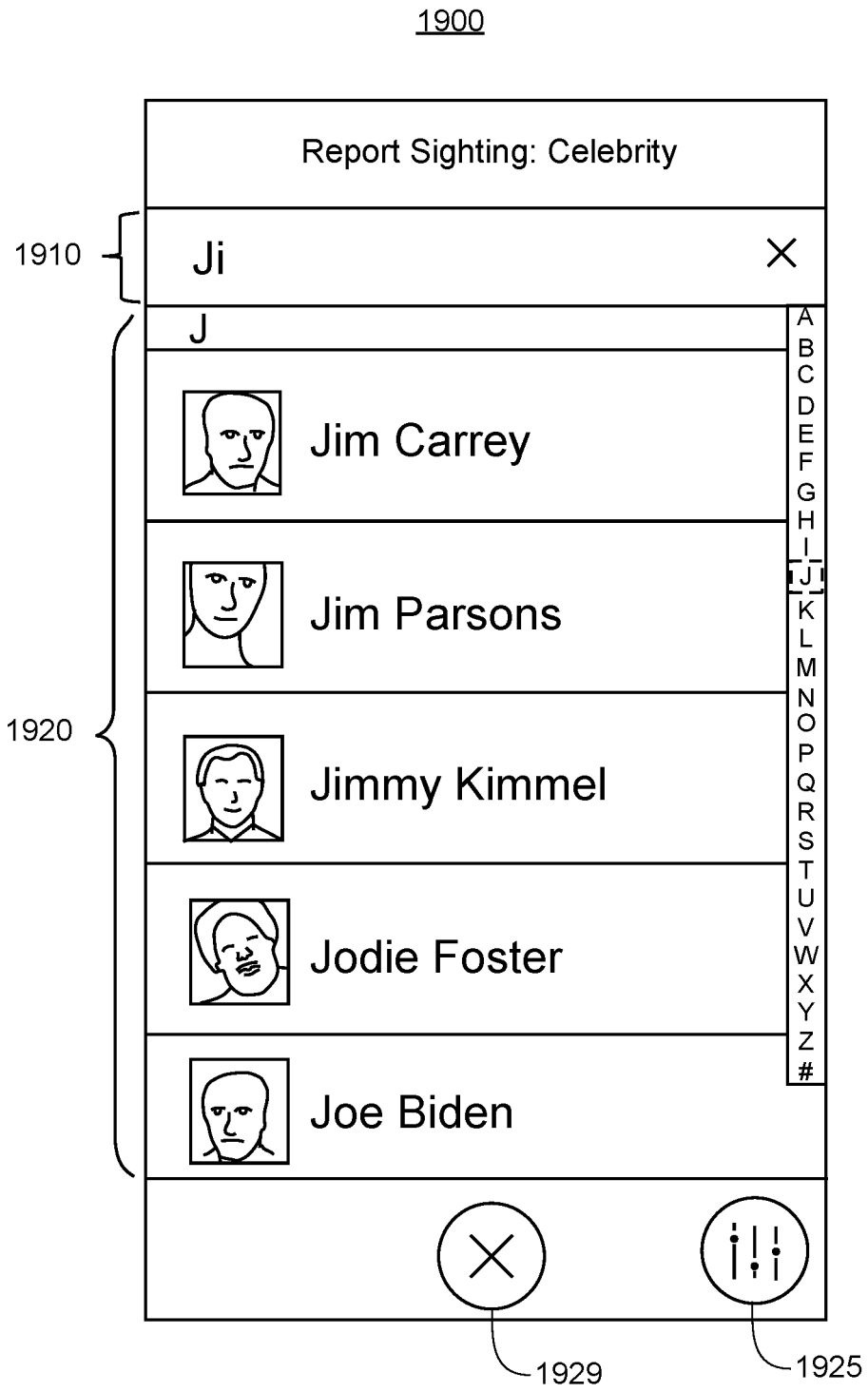

1900
Report Sighting: Celebrity
1910
Ji
J
Jim Carrey
Jim Parsons
Jimmy Kimmel
Jodie Foster
Joe Biden
1920
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #
1929
1925

Fig. 19B

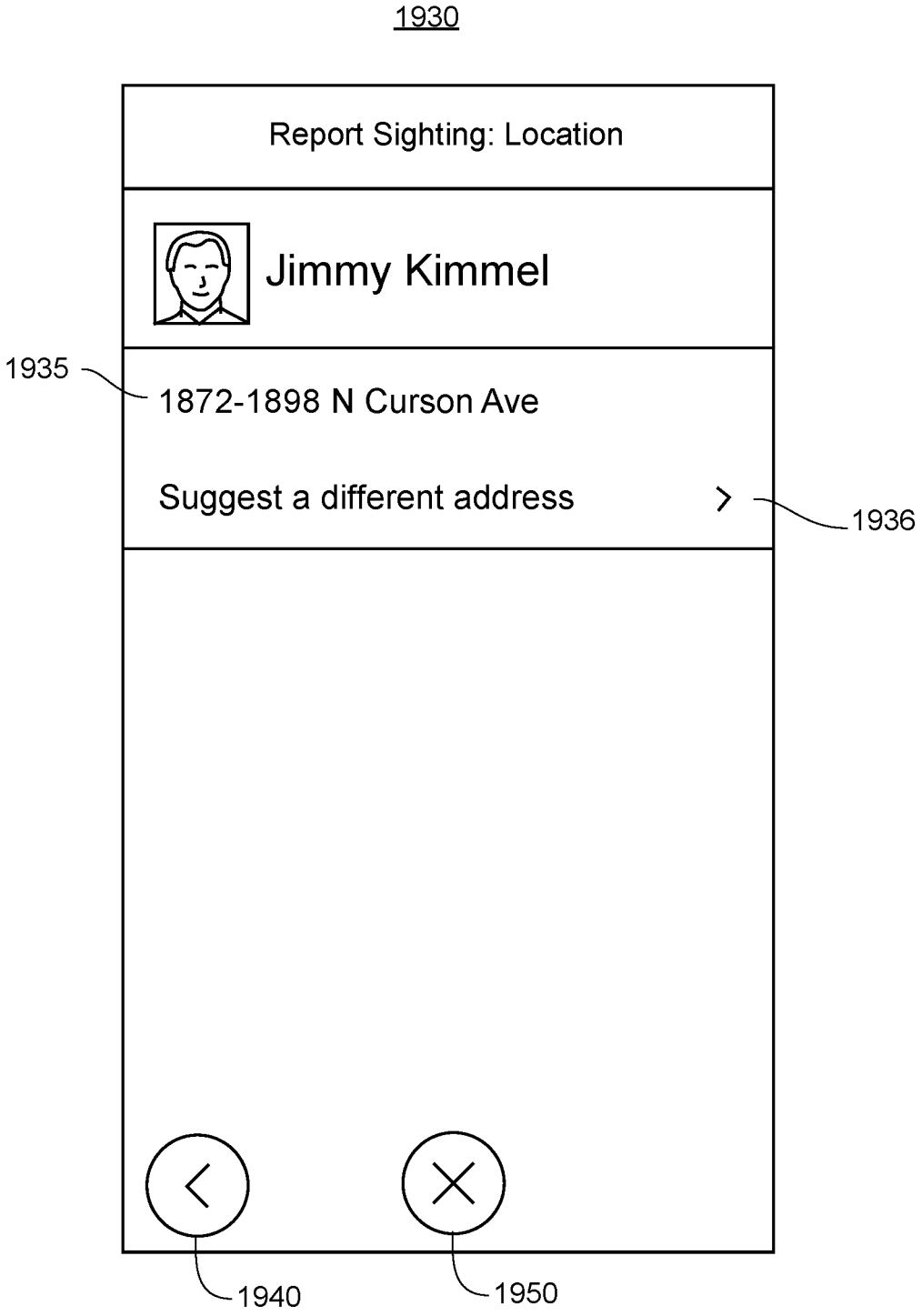

1930
Report Sighting: Location
Jimmy Kimmel
1935
1872-1898 N Curson Ave
Suggest a different address
1936
1940
1950

Fig. 19C

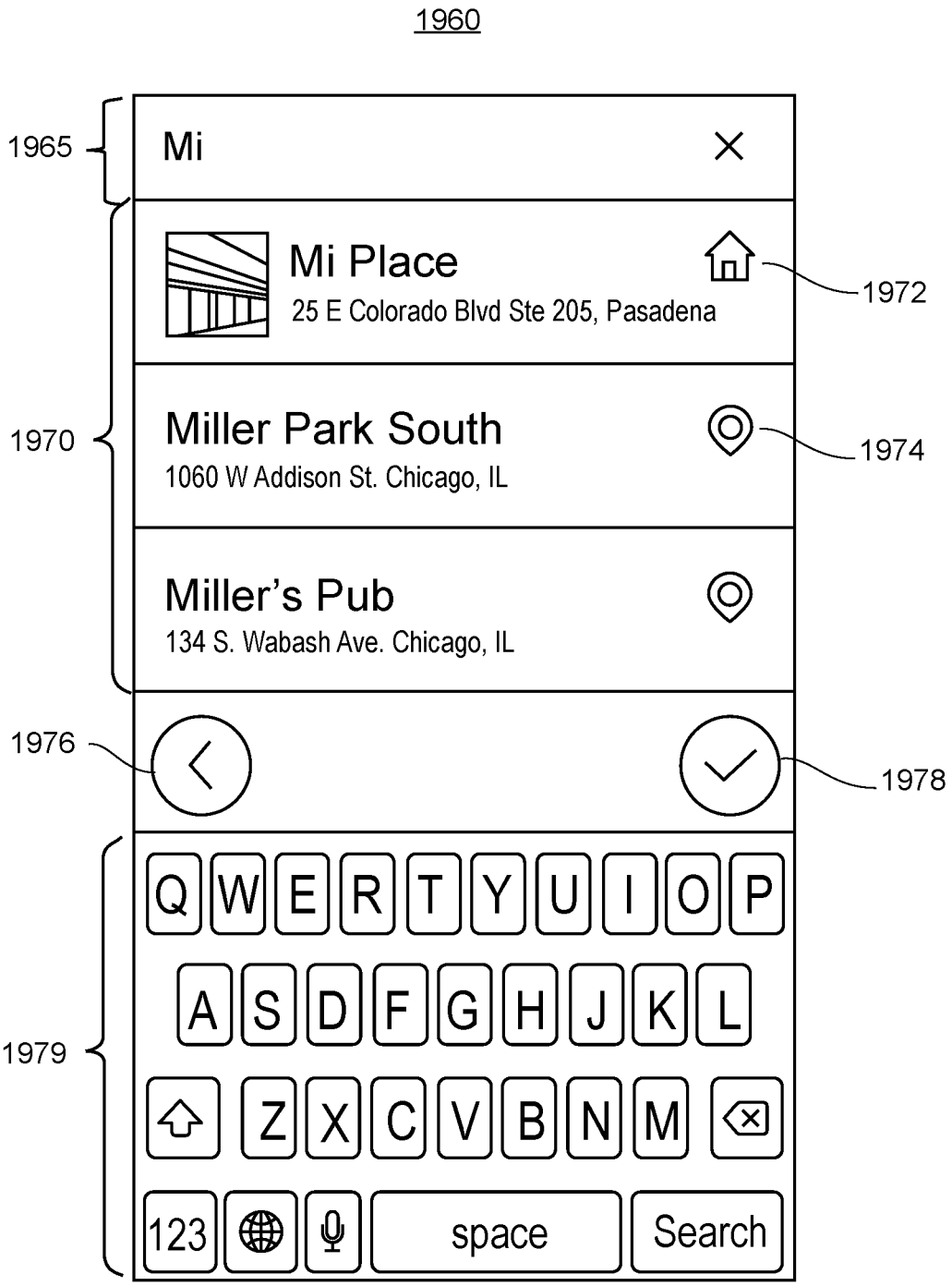

1960
1965
Mi
Mi Place
25 E Colorado Blvd Ste 205, Pasadena
1972
1970
Miller Park South
1060 W Addison St. Chicago, IL
1974
Miller's Pub
134 S. Wabash Ave. Chicago, IL
1976
1978
1979
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
Search

Fig. 19D

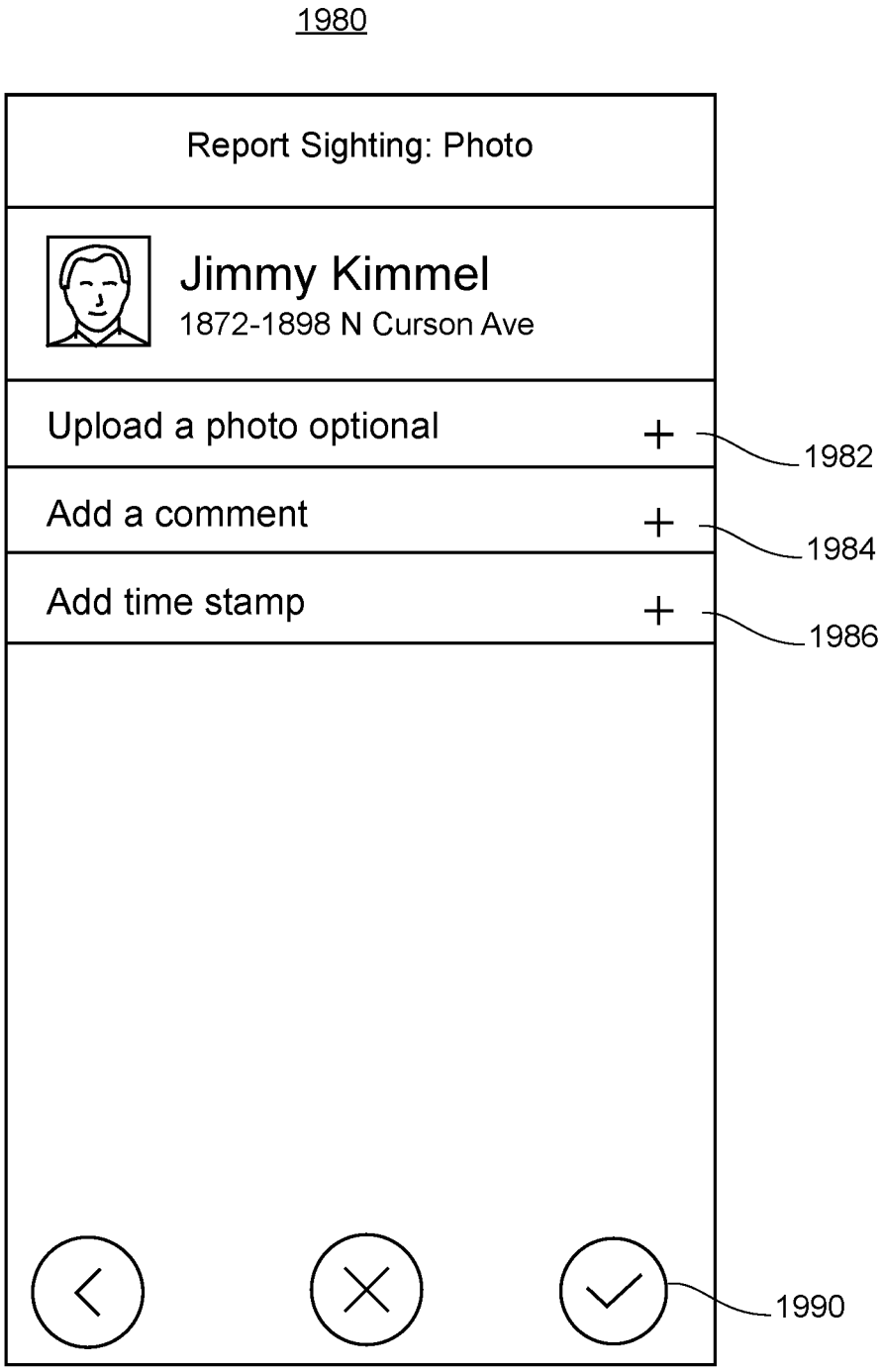

1980
Report Sighting: Photo
Jimmy Kimmel
1872-1898 N Curson Ave
Upload a photo optional
+
1982
Add a comment
+
1984
Add time stamp
+
1986
1990

Fig. 20

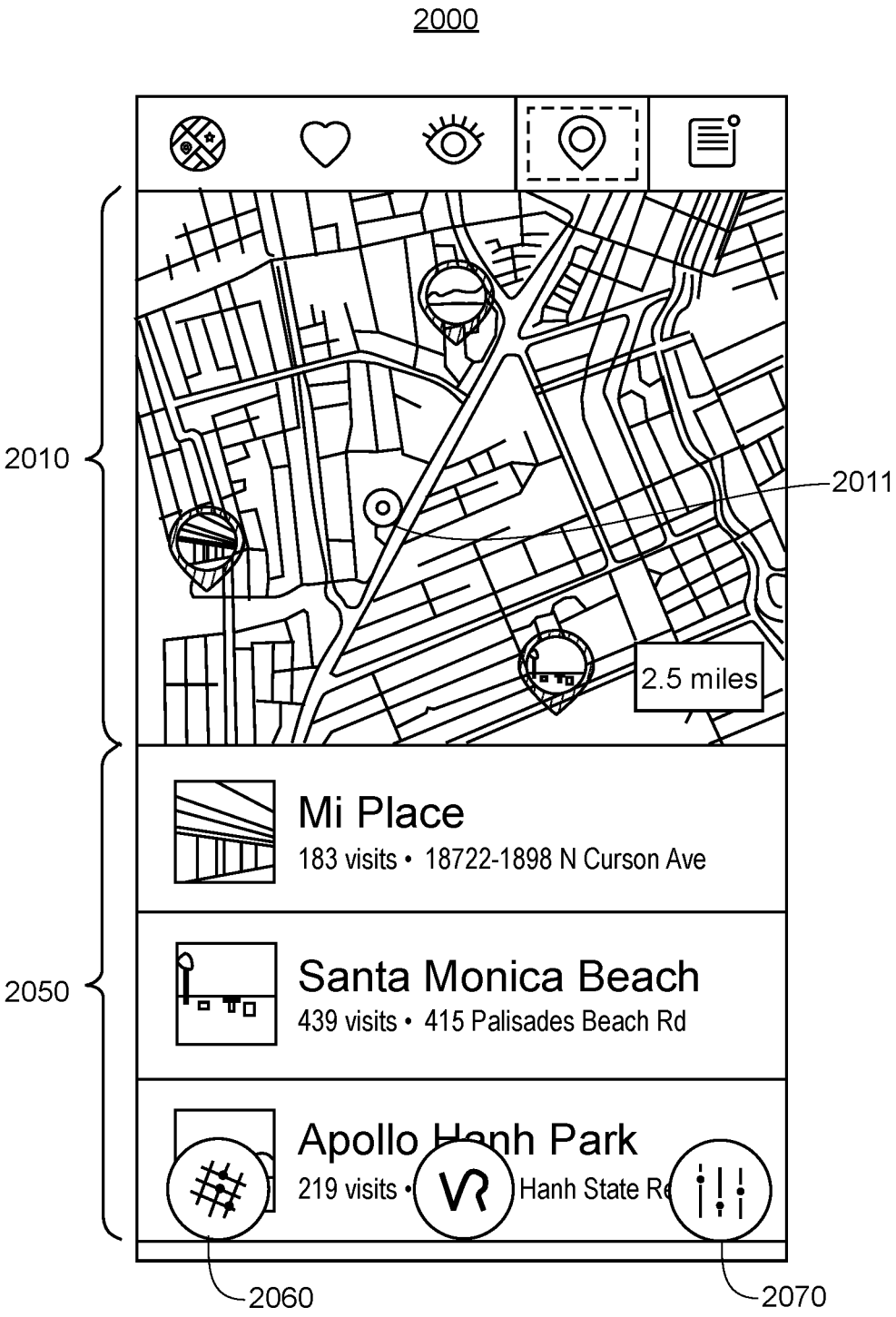

2000
2010
2011
2.5 miles
Mi Place
183 visits • 18722-1898 N Curson Ave
2050
Santa Monica Beach
439 visits • 415 Palisades Beach Rd
Apollo Hanh Park
219 visits •
Hanh State Re
2060
2070

Fig. 21A

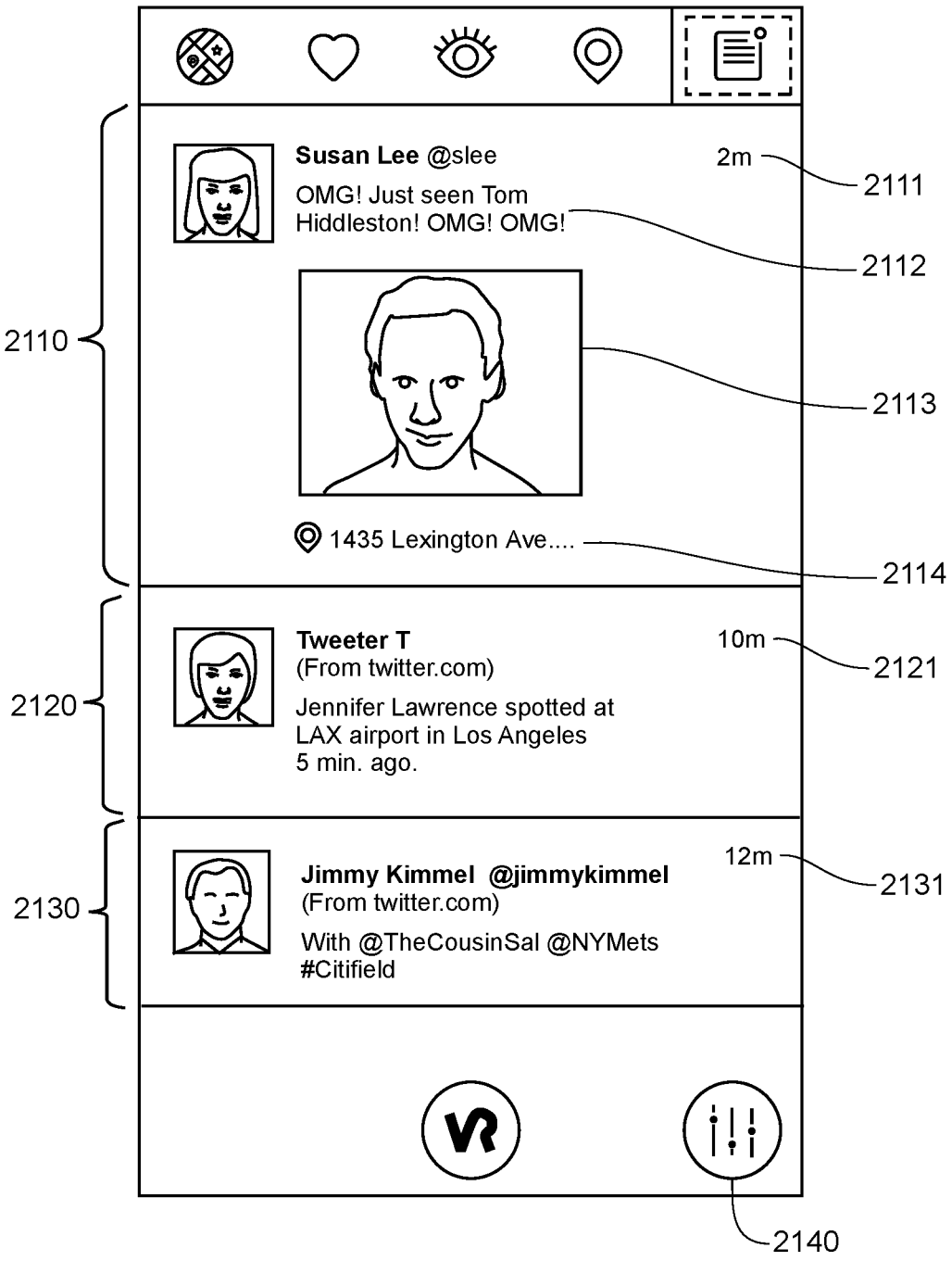

2100
Susan Lee @slee
2m
2111
OMG! Just seen Tom Hiddleston! OMG! OMG!
2112
2113
1435 Lexington Ave....
2114
2110
Tweeter T
(From twitter.com)
10m
2121
Jennifer Lawrence spotted at LAX airport in Los Angeles 5 min. ago.
2120
Jimmy Kimmel @jimmykimmel
(From twitter.com)
12m
2131
With @TheCousinSal @NYMets #Citifield
2130
2140

Fig. 21B

2150

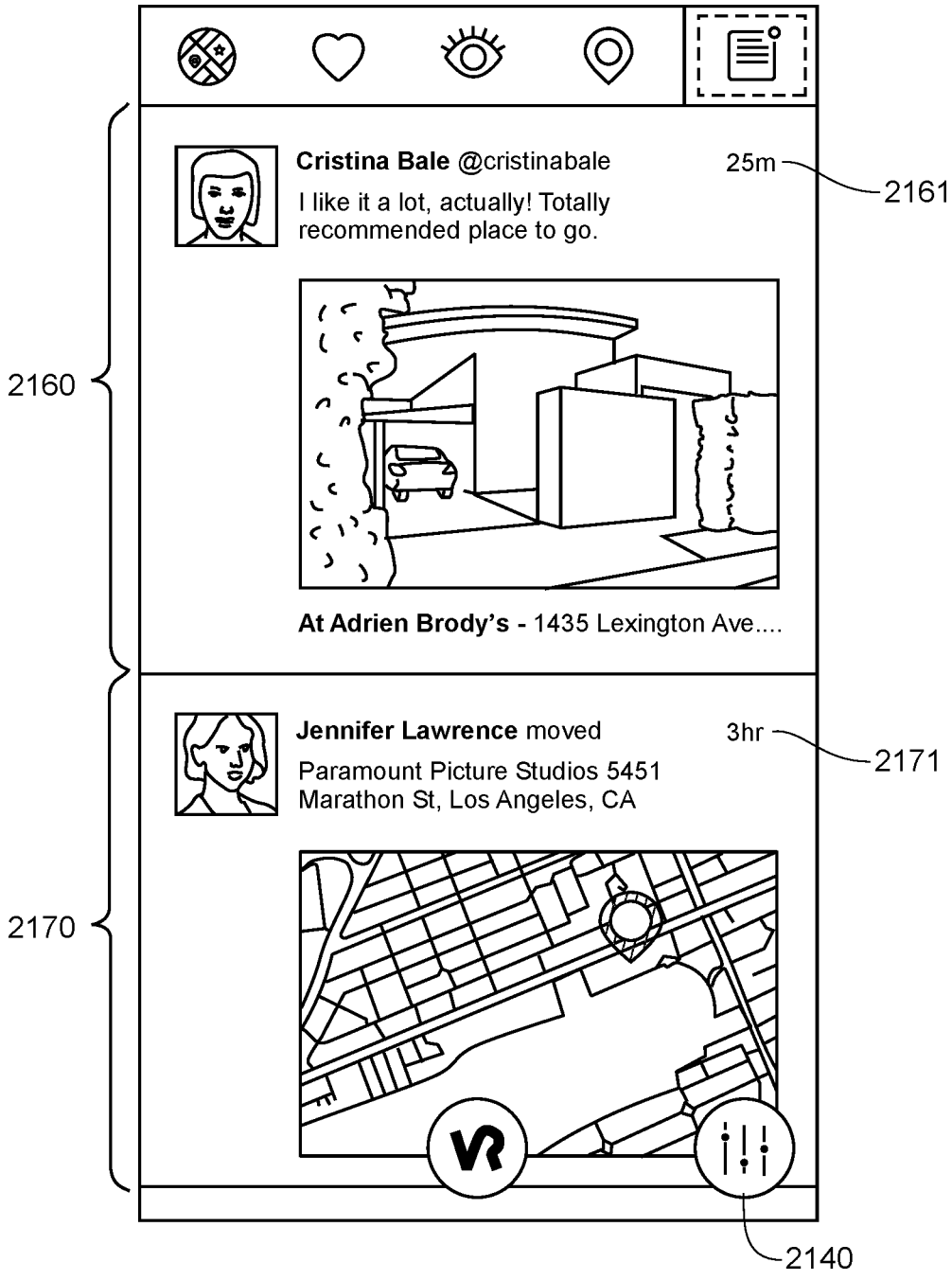

Cristina Bale @cristinabale
25m
2161
I like it a lot, actually! Totally recommended place to go.
2160
At Adrien Brody's - 1435 Lexington Ave....
Jennifer Lawrence moved
3hr
2171
Paramount Picture Studios 5451 Marathon St, Los Angeles, CA
2170
2140

Fig. 22

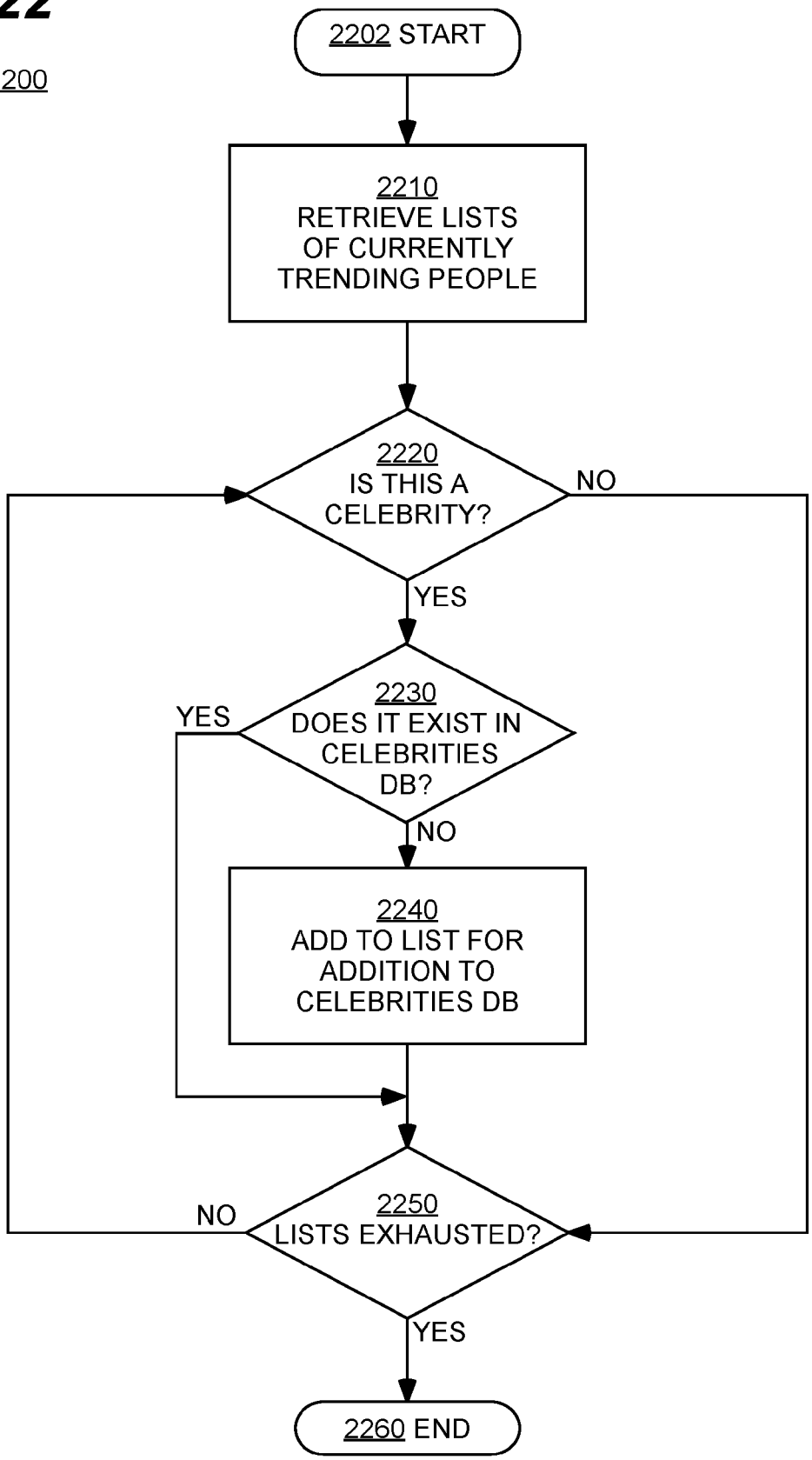

2200
2202 START
2210
RETRIEVE LISTS OF CURRENTLY TRENDING PEOPLE
2220
IS THIS A CELEBRITY?
NO
YES
2230
DOES IT EXIST IN CELEBRITIES DB?
YES
NO
2240
ADD TO LIST FOR ADDITION TO CELEBRITIES DB
2250
LISTS EXHAUSTED?
NO
YES
2260 END

Fig. 23

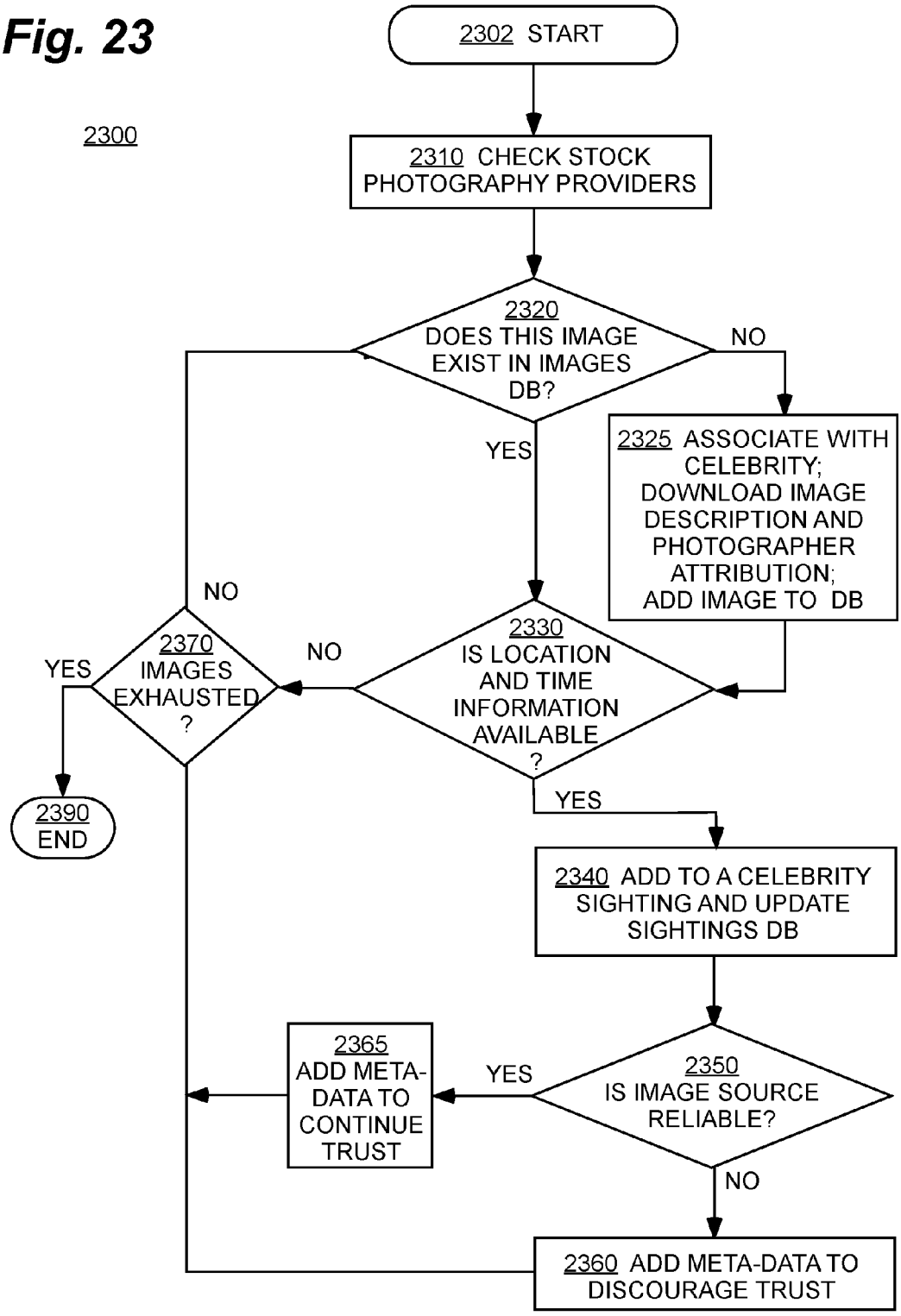

2300
2302 START
2310 CHECK STOCK PHOTOGRAPHY PROVIDERS
2320 DOES THIS IMAGE EXIST IN IMAGES DB?
NO
YES
2325 ASSOCIATE WITH CELEBRITY; DOWNLOAD IMAGE DESCRIPTION AND PHOTOGRAPHER ATTRIBUTION; ADD IMAGE TO DB
2330 IS LOCATION AND TIME INFORMATION AVAILABLE ?
NO
YES
2370 IMAGES EXHAUSTED ?
NO
YES
2390 END
2340 ADD TO A CELEBRITY SIGHTING AND UPDATE SIGHTINGS DB
2350 IS IMAGE SOURCE RELIABLE?
YES
NO
2365 ADD META-DATA TO CONTINUE TRUST
2360 ADD META-DATA TO DISCOURAGE TRUST

Fig. 24

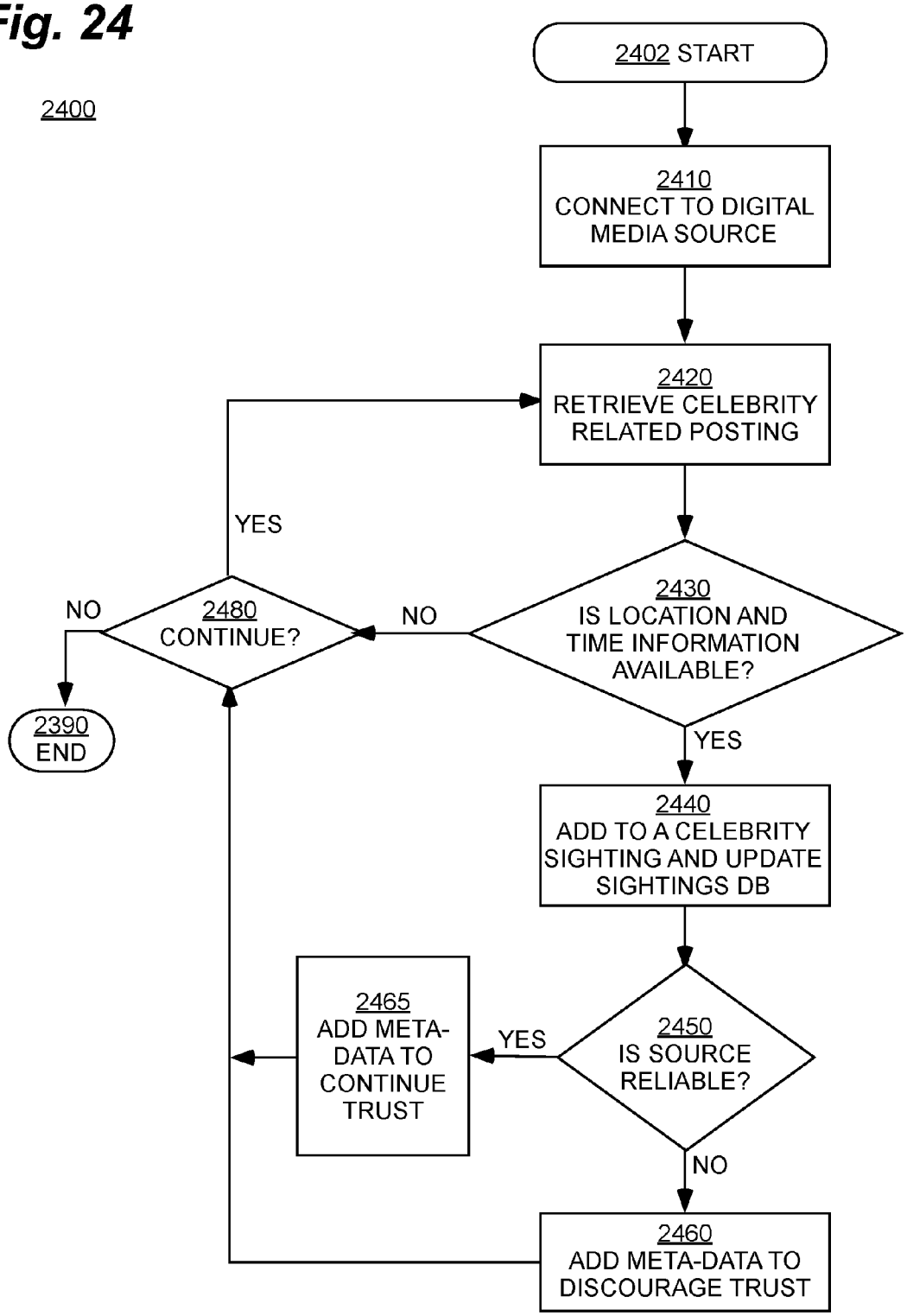
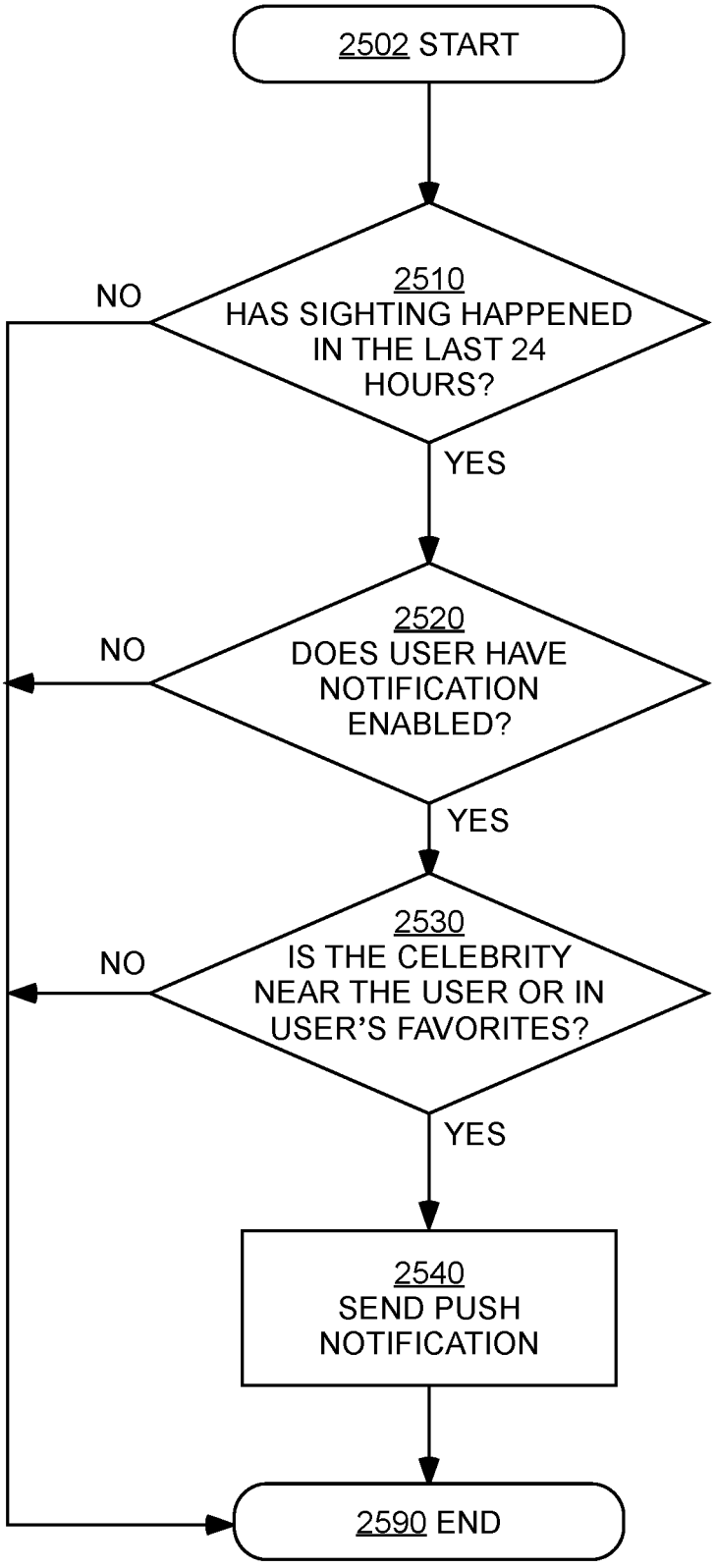

2400
2402 START
2410 CONNECT TO DIGITAL MEDIA SOURCE
2420 RETRIEVE CELEBRITY RELATED POSTING
2430 IS LOCATION AND TIME INFORMATION AVAILABLE?
NO
YES
2480 CONTINUE?
NO
YES
2390 END
2440 ADD TO A CELEBRITY SIGHTING AND UPDATE SIGHTINGS DB
2450 IS SOURCE RELIABLE?
YES
NO
2465 ADD META-DATA TO CONTINUE TRUST
2460 ADD META-DATA TO DISCOURAGE TRUST

Fig. 25


2500
2502 START
2510
HAS SIGHTING HAPPENED IN THE LAST 24 HOURS?
NO
YES
2520
DOES USER HAVE NOTIFICATION ENABLED?
NO
YES
2530
IS THE CELEBRITY NEAR THE USER OR IN USER'S FAVORITES?
NO
YES
2540
SEND PUSH NOTIFICATION
2590 END

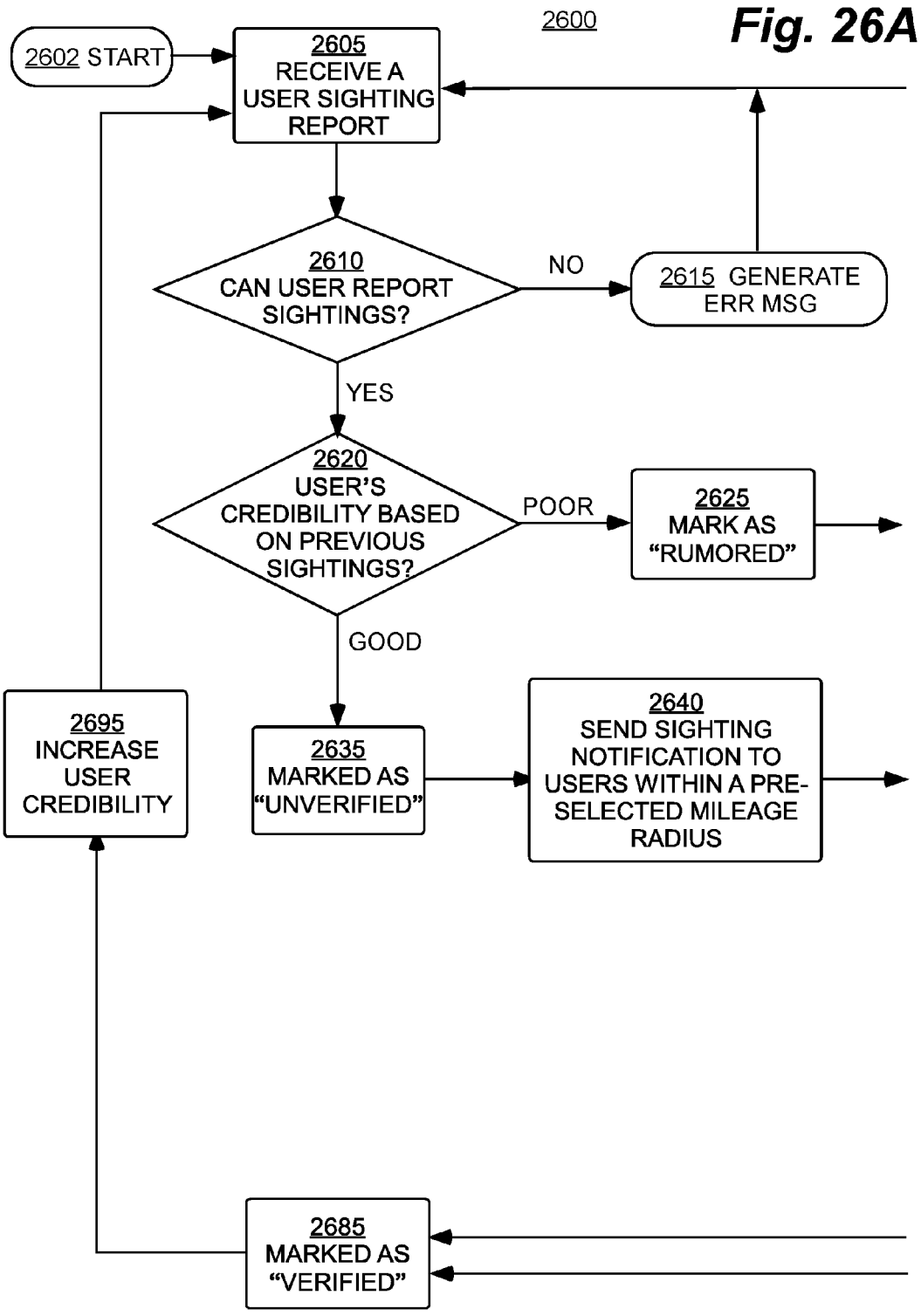

2600
2602 START
2605 RECEIVE A USER SIGHTING REPORT
2610 CAN USER REPORT SIGHTINGS?
NO
2615 GENERATE ERR MSG
YES
2620 USER'S CREDIBILITY BASED ON PREVIOUS SIGHTINGS?
POOR
2625 MARK AS "RUMORED"
GOOD
2695 INCREASE USER CREDIBILITY
2635 MARKED AS "UNVERIFIED"
2640 SEND SIGHTING NOTIFICATION TO USERS WITHIN A PRE-SELECTED MILEAGE RADIUS
2685 MARKED AS "VERIFIED"

Fig. 26A

Fig. 26B

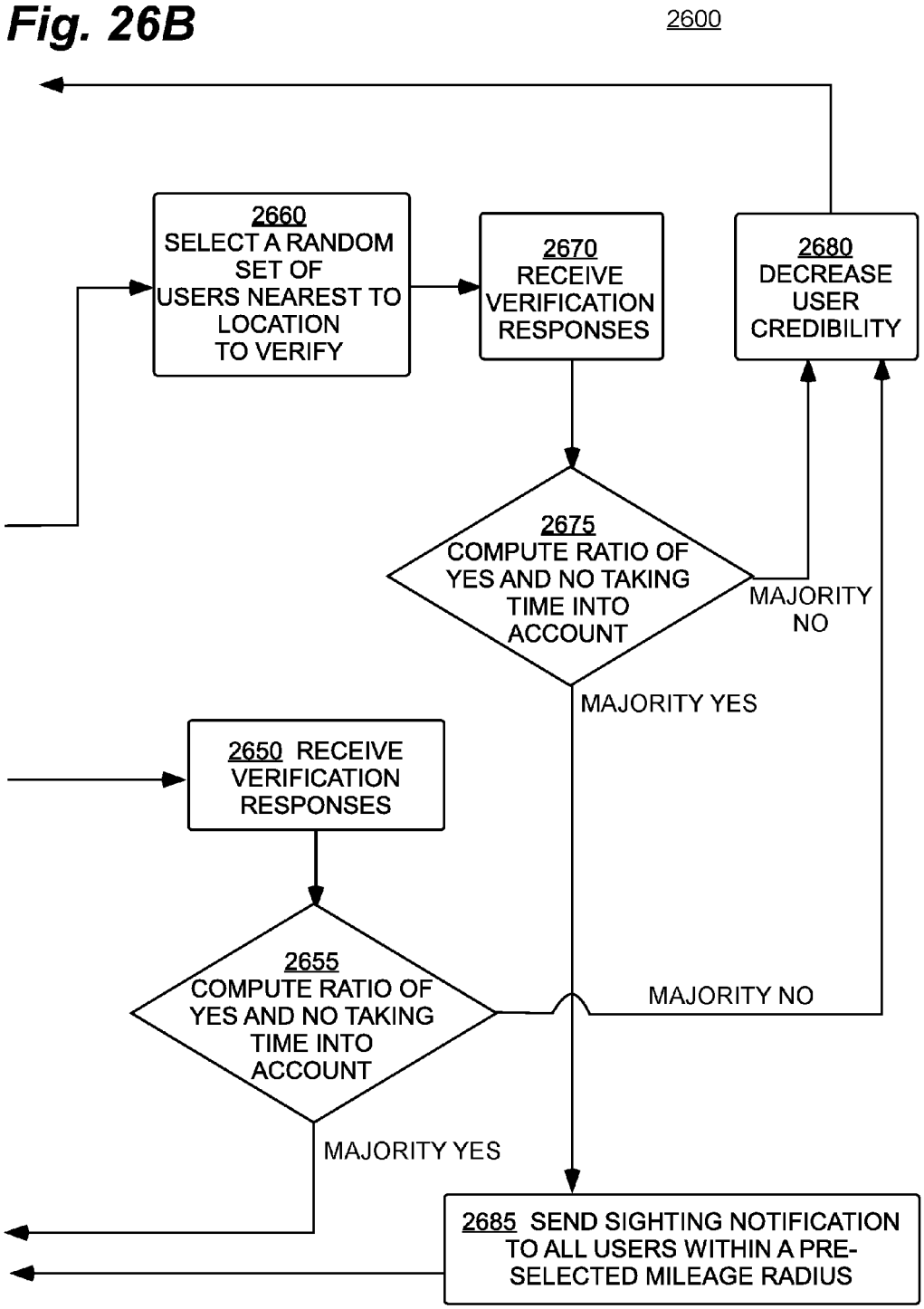
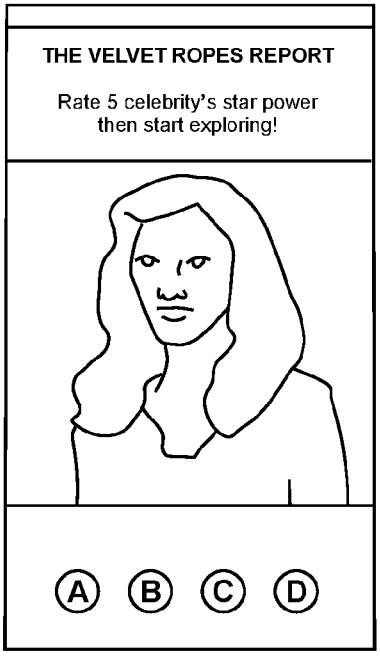
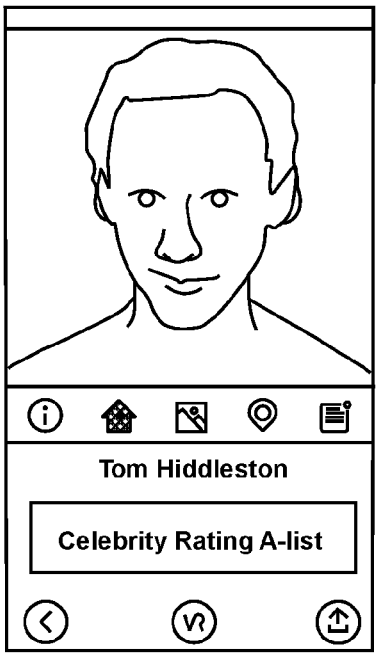

2600
2660 SELECT A RANDOM SET OF USERS NEAREST TO LOCATION TO VERIFY
2670 RECEIVE VERIFICATION RESPONSES
2680 DECREASE USER CREDIBILITY
2675 COMPUTE RATIO OF YES AND NO TAKING TIME INTO ACCOUNT
MAJORITY NO
MAJORITY YES
2650 RECEIVE VERIFICATION RESPONSES
2655 COMPUTE RATIO OF YES AND NO TAKING TIME INTO ACCOUNT
MAJORITY NO
MAJORITY YES
2685 SEND SIGHTING NOTIFICATION TO ALL USERS WITHIN A PRE-SELECTED MILEAGE RADIUS

Fig. 27

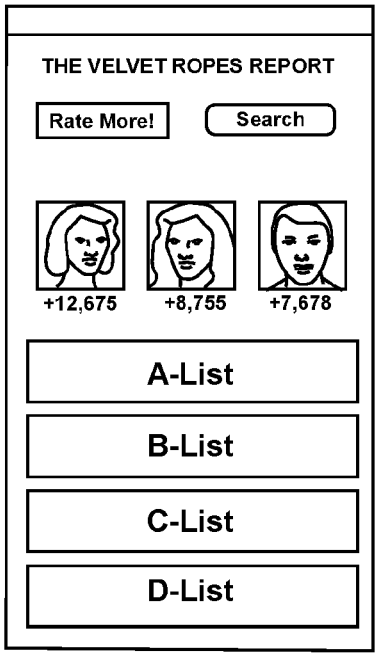
2710



2720



2730



2740

Fig. 28

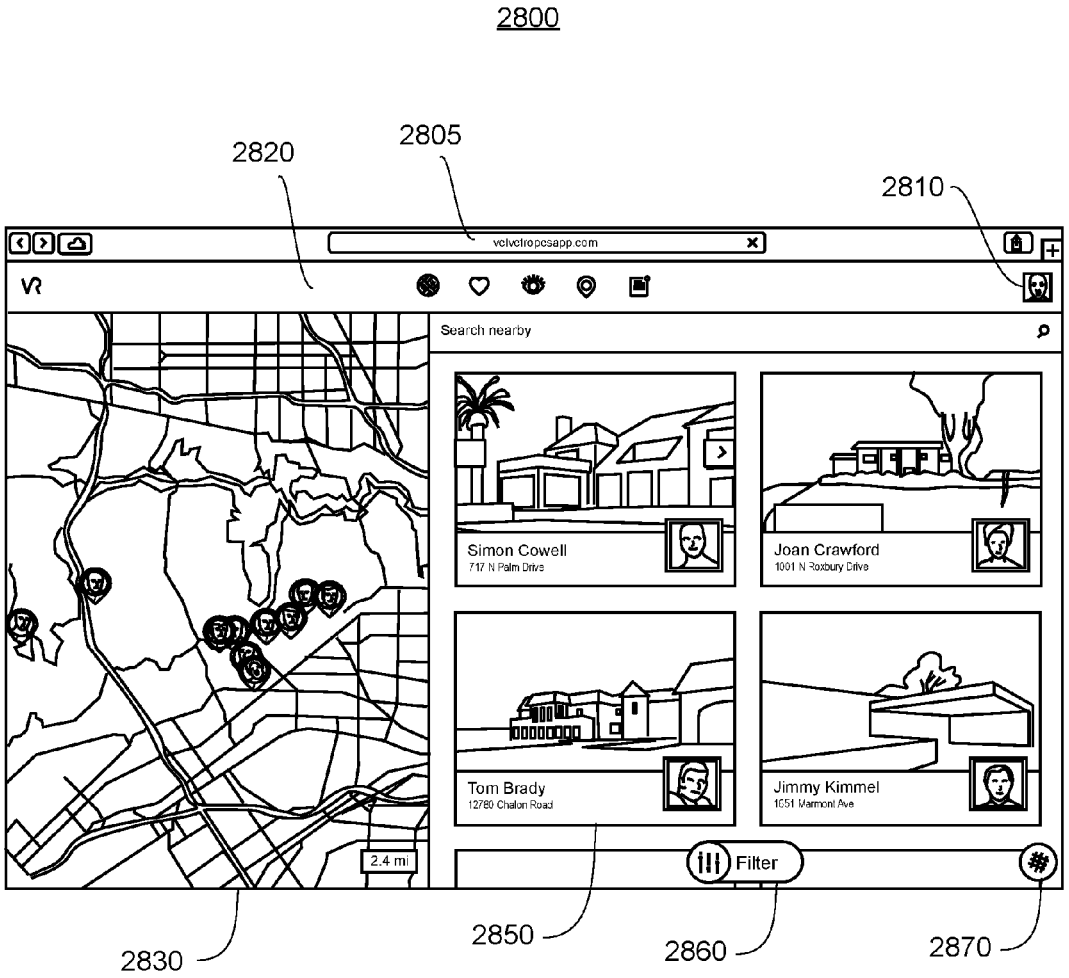
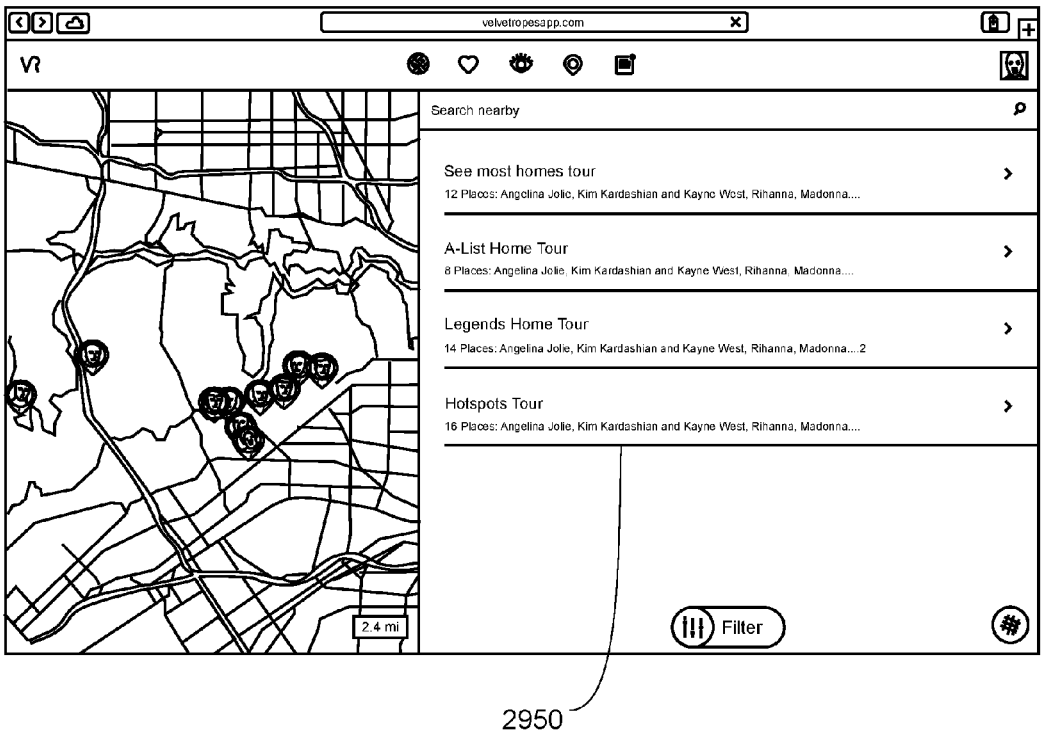

2800
2820
2805
2810
velvetropesapp.com
Search nearby
Simon Cowell
717 N Palm Drive
Joan Crawford
1001 N Roxbury Drive
Tom Brady
12780 Chalon Road
Jimmy Kimmel
1051 Marmont Ave
2.4 mi
Filter
2830
2850
2860
2870

Fig. 29

2900


velvetropesapp.com
Search nearby
See most homes tour
12 Places: Angelina Jolie, Kim Kardashian and Kayne West, Rihanna, Madonna....
A-List Home Tour
8 Places: Angelina Jolie, Kim Kardashian and Kayne West, Rihanna, Madonna....
Legends Home Tour
14 Places: Angelina Jolie, Kim Kardashian and Kayne West, Rihanna, Madonna... 2
Hotspots Tour
16 Places: Angelina Jolie, Kim Kardashian and Kayne West, Rihanna, Madonna....
2.4 mi
Filter
2950

METHODS AND SYSTEMS FOR GENERATING A DIGITAL CELEBRITY MAP TOUR GUIDE

REFERENCE TO RELATED APPLICATIONS

This application is a non-provisional of and claims the benefit of provisional application U.S. Ser. No. 62/091,519, filed on Dec. 13, 2014,and entitled "SMART PHONE APPLICATION THAT IS A DIGITAL CELEBRITY MAP TOUR GUIDE FOR THOSE VISITING ANY LOCATION WHERE A CELEBRITY MAY RESIDE," the entire disclosure of which is hereby incorporated in its entirety herein.

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FIELD OF THE INVENTION

Embodiments of the present invention broadly relate to systems and methods for creating an interactive digital celebrity map tour guide. More particularly, embodiments of the present invention relate to displaying and generating a customized tour to celebrity places, providing corresponding celebrity information, and facilitating the reporting and notification of celebrity sightings. A digital celebrity map system thus implemented enables tourists or sightseers to navigate to celebrity-related attractions, to easily access associated celebrity information, and to interact with other fans within a celebrity-inspired social network.

BACKGROUND OF THE INVENTION

The statements in this section may serve as a background to help understand the invention and its application and users, but may not constitute prior art.

As the world economy grows and international tourism rapidly expands, there has been a recent explosion in the celebrity tour business where many tours take celebrity seekers to visit residences owned and hotspots frequented by celebrities past and present. Celebrity-oriented van and bus tours trade on the ever-growing interests in the private lives of celebrities and the fantasies of serendipitous celebrity encounters. In places like Hollywood, Beverly Hills, and New York City, visitors pay a hefty fee for roofless bus tours that last for only an hour or two, gawking at the luxuriousness of celebrity estates and trying to catch stars living or working in their natural surroundings.

On a typical celebrity bus tour, livery drivers often serve as the voice tour guides as well, blasting news, stories, anecdotes, and gossips over a loud speaker or individual headphones, building and delivering the impression that celebrities are just around the corner. One issue with such bus tours is the lack of quality control on the content of the tour. There is no guarantee that residences or other sighting locations featured on a tour are ever associated with a celebrity, and false advertisements are rarely investigated. Also, unless regular news updates are provided to tour guides, information they deliver becomes unreliable over time. In addition, for group bus tours, visitors are not able to pick or choose which celebrity locations to visit. Instead, they are forced into inflexible tour durations at the tour operator's itinerary, often unable to stay at any particular location of interest for enough time to capture a good photograph or to look up the address or history of the place they have just visited.

An alternative to celebrity bus tours is to purchase a "celebrity star map," a physical map that contains a list of hundreds of celebrity names and associated residences and hotspot locations. While star maps allow visitors to tour at their own paces, such maps are not always geographically accurate, and addresses often become obsolete, as real estate properties frequently change hands among the wealthy. Moreover, for those who want to visit sighting locations where celebrities have been spotted and hotspots where celebrities frequent, a physical map that has not been recently updated becomes useless when the celebrity of interest moves. More importantly, navigating with a physical map filled with hundreds of names may not be as obvious as one might expect. Confusion can easily arise for those lacking navigational skills. With a large number of celebrities listed in very small font, visitors may further have a hard time determining which locations to navigate to and how to optimize the tour, under their own constraints on time and transportation modes. Lastly, many times even when visitors successfully find a celebrity residence, they may come to see poor views blocked by privacy shrubbery or gates with long driveways.

While paper maps including paper celebrity maps are still popular for their portability and general reliability, digital maps have boomed over the past decade with the advent of ever more accurate positioning systems and the availability of mobile devices. Dedicated vehicle GPS devices, and mapping applications on mobile devices are almost ubiquitous nowadays. Nonetheless, in the field of celebrity tours, no integrated mapping system exists to provide customized, self-guided tours, to allow users to read corresponding celebrity biographies and news, to browse celebrity real estate and hotspot profiles, or to receive live celebrity sighting updates. Likewise, while social networking and media websites such as Twitter are widely available for users to search for celebrity sighting information within their proximity, such passive searches do not, in any sense, maximize the users' probability of sighting the celebrity themselves. For those who wait for hours just to get a glimpse of Justin Bieber, knowing that they have just missed the pop idol from one block away could be devastating news.

Therefore, in view of the aforementioned difficulties, there is an unsolved need to provide to celebrity seekers, self-guided yet fully customized and curated celebrity tours, with periodic or live updates to ensure associated celebrity information, including sighting information, is accurate and up to date.

It is against this background that various embodiments of the present invention were developed.

BRIEF SUMMARY OF THE INVENTION

Systems and methods are provided for creating a digital celebrity map tour guide. More specifically, one embodiment of the present invention is a method for creating a tour on a digital celebrity map, the method comprising steps to establish a client server connection between a server and a computing appliance used by a user, to receive a user

geolocation from the computing appliance, to determine a map area around the user geolocation, and the retrieve, from the data repository, celebrity geolocations within the map area, wherein each celebrity geolocation is associated with at least one named celebrity, and wherein each celebrity geolocation is associated with a celebrity geolocation type selected from the group consisting of celebrity real estate property, celebrity sighting location, and celebrity hotspot. The method further includes steps to transmit the celebrity geolocations to the computing appliance, for display on the digital celebrity map, to receive a request to generate a tour to the celebrity geolocations, wherein the tour starts from the user geolocation, and to generate the tour to the celebrity geolocations for display on the digital celebrity map, in response to the request.

In some embodiments of the present invention, the method further includes steps to receive, from the user, at least one filtering criterion for filtering the celebrity geolocations, wherein filtering criteria include celebrity name, celebrity status, celebrity rating, celebrity geolocation type, and distance of a celebrity geolocation from the user geolocation. In response to receiving the at lest one filter criterion, the celebrity geolocations are filtered accordingly to the at least one filter criterion.

In some embodiments, the method further includes steps to receive a user selection of a travel mode, wherein the map area around the user geolocation is determined according to the selected travel mode, and wherein the tour is generated according to the selected travel mode.

In some embodiments, each celebrity geolocation is associated with an avatar of the at least one named celebrity, for display on the digital celebrity map as a location marker. In some other embodiments, the generated tour includes a graphical display of navigation directions. In yet other embodiments, the generated tour includes a profile for each celebrity geolocation.

In some embodiments, the method further includes steps to search digital media to find a currently-trending celebrity, to determine whether the currently-trending celebrity found exists in the data repository, and to add the currently-trending celebrity to the data repository in response to determining that he or she does not exist in the data repository.

In some embodiments, the method further includes steps to search digital image sources to find an image associated with a celebrity, and to determine whether the celebrity exists in the data repository. In response to determining that the celebrity exists in the data repository, the method further includes steps to determine whether the image exists in the data repository for the celebrity, and in response to a negative decision, associate the image with the celebrity in the data repository. In some other embodiments, the method further includes steps to determine whether the image is associated with a celebrity sighting. In response to determining that the image is indeed associated with a celebrity sighting, the method further determines whether the celebrity sighting exists in the data repository, and in response to determining that the celebrity sighting does not exist in the data repository, adding the celebrity sighting to the data repository. In yet some other embodiments, the method further includes steps to receive a credibility rating for the image, and update a credibility score of the digital image source according to the received credibility rating.

In another aspect, the present invention is a non-transitory, computer-readable storage medium storing executable instructions, which when executed by a processor, causes the processor to perform a process of creating a tour on a digital celebrity map in a client-server environment, the instructions causing the processor to perform the aforementioned steps.

In another aspect, the present invention is a system for creating a tour on a digital celebrity map, the system comprising a user device having a process, a display, and a first memory; a server comprising a second memory and a data repository; a telecommunications-link between the user device and the server; and a plurality of computer codes embodied on the memories of the user device and the server, the plurality of computer codes which when executed causes the server and the user-device to execute a process comprising the aforementioned steps.

In yet another aspect, the present invention is a computerized server comprising at least one processor, a memory, and a plurality of computer codes embodied on the memory, the plurality of computer codes which when executed causes the processor to execute a process comprising the aforementioned steps.

Yet other aspects of the present invention include the methods, processes, and algorithms comprising the steps described herein, and also include the processes and modes of operation of the systems and servers described herein. Other aspects and embodiments of the present invention will become apparent from the detailed description of the invention when read in conjunction with the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the present invention described herein are exemplary, and not restrictive. Embodiments will now be described, by way of examples, with reference to the accompanying drawings, in which:

FIG. **1** is a schematic diagram of a network configuration for practicing one embodiment of the present invention.

FIG. **2** is a schematic diagram of a server for creating a celebrity map tour guide, according to one embodiment of the present invention.

FIG. **3** is a schematic diagram of a user device where the invention may be practiced, according to one embodiment of the present invention.

FIG. **4** is a flow diagram showing a method of generating a celebrity map tour from a user geolocation, according to one embodiment of the present invention.

FIG. **5** is an exemplary screenshot of a menu page of a user application implementing one embodiment of the present invention.

FIG. **6** is an exemplary screenshot of a celebrity places page containing a celebrity map, according to one embodiment of the present invention.

FIG. **7** is an exemplary screenshot of a tours page for customizing a celebrity tour, according to one embodiment of the present invention.

FIG. **8** is an exemplary screenshot of a celebrity places page where a tour path is displayed graphically, according to one embodiment of the present invention.

FIG. **9** is an exemplary screenshot of a filter page for filtering available celebrity places for a celebrity tour, according to one embodiment of the present invention.

FIG. **10** is an exemplary screenshot of a full page display of a celebrity map tour, according to one embodiment of the present invention.

FIG. **11** is an exemplary screenshot of a navigation directions page, according to one embodiment of the present invention.

FIGS. **12**A and **12**B are exemplary screenshots of a selected celebrity place page, according to one embodiment of the present invention.

FIG. **13** is an exemplary screenshot of a celebrity profile page, according to one embodiment of the present invention.

FIG. **14** is an exemplary screenshot of a celebrity homes page, according to one embodiment of the present invention.

FIG. **15** is an exemplary screenshot of a celebrity's hotspots page, according to one embodiment of the present invention.

FIG. **16** is an exemplary screenshot of a favorites page, according to one embodiment of the present invention.

FIG. **17** is an exemplary screenshot of a sightings page, according to one embodiment of the present invention.

FIG. **18** is an exemplary screenshot of a selected sighting page, according to one embodiment of the present invention.

FIGS. **19**A, **19**B, **19**C, and **19**D are exemplary screenshots for reporting celebrity sightings within a system implemented according to one embodiment of the present invention.

FIG. **20** is an exemplary screenshot of a hotspots page, according to one embodiment of the present invention.

FIGS. **21**A and **21**B are exemplary screenshots of a notifications page, according to one embodiment of the present invention.

FIG. **22** is a flow diagram for adding new celebrities to a celebrity database, according to one embodiment of the present invention.

FIG. **23** is a flow diagram for adding new images to an images database, according to one embodiment of the present invention.

FIG. **24** is a flowchart for adding celebrity sighting from digital media sources to a sightings database, according to one embodiment of the present invention.

FIG. **25** is a flowchart for generating push notifications to a user when a celebrity sighting of interest to the user occurs, according to one embodiment of the present invention.

FIGS. **26**A and **26**B are a flowchart for user-generated celebrity sighting report verification, according to one embodiment of the present invention.

FIG. **27** is a set of exemplary screenshots showing several pages for celebrity rating, according to one embodiment of the present invention.

FIG. **28** is an exemplary screenshot of a client application interface on non-limited displays, implemented according to one embodiment of the present invention.

FIG. **29** is another exemplary screenshot of a client application interface on non-limited displays, implemented according to one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Definitions

Some illustrative definitions are provided to assist in understanding the present invention, but these definitions are not to be read as restricting the scope of the present invention. The terms may be used in the form of nouns, verbs, or adjective, within the scope of the definitions.

"Celebrity" refers to a person well known to the public, or those who are often associated with fame and attention in the media. Groups of people, animals, or even fictional characters can also achieve celebrity status. Some examples of celebrities include, but are not limited to, entertainment stars, pro-athletes, artists, musicians, models, fashionistas, political figures, royalty, best-selling authors, prominent scientists, and international entrepreneurs. A legacy, legend, or legendary celebrity is one who is deceased.

"User geolocation" is a geographical location associated with a user of the system, according to some embodiments of the present invention. A user geolocation may be explicitly given by the user, as a street address, a named place, a local landmark, or a postal address or postal code. A user geolocation may also be determined automatically by a Global Positioning System (GPS) device, or other types of devices, modules, or software capable of determining the associated geographical location through triangulation or similar types of algorithms. A user geolocation may be represented by a street address, a named place, a local landmark, a postal address or postal code, or a set of geographic coordinates as determined by a GPS system.

"Celebrity geolocation" is a geographical location associated with a celebrity within a system implemented according to some embodiments of the present invention. A celebrity geolocation associated with a particular celebrity may refer to any locations or places where the celebrity may have lived, worked, visited, or even mentioned during shows, interviews, or in other types of media, including social media. Some exemplary types of celebrity geolocations include residences and other real estate properties owned or leased by the celebrity, sighting locations where the celebrity has been seen, and hotspots such as gyms and restaurants that the celebrity frequents. A celebrity geolocation may be associated with a street address, a named place, a local landmark, a postal address or a postal code, and may be determined automatically by a global positioning system. A celebrity geolocation with the same address or geographical coordinates may be associated with multiple celebrities. A celebrity geolocation may also be referred to as a "celebrity location" or a "celebrity place."

"Celebrity sighting" is the event where a celebrity is seen by one or more members of the public. A celebrity sighting may also be referred to as a "celebrity spotting." Generally, a celebrity sighting is associated with a celebrity name, a sighting location, and a sighting time.

"Celebrity hotspots" are popular places that celebrities frequently visit, and where celebrity sightings often take place. Some exemplary hotspots include hotels, bars, clubs, lounges, restaurants, fashion shops, gyms, jogging routes, etc. Celebrity hotspots may further refer to locations where celebrities have made appearances, or filmed movies or shows. A celebrity hotspot may be a celebrity sighting location concurrently.

"Tour" or "curated tour" is a route that traverses one or more celebrity geolocations, with navigation directions provided in a sequential order starting from a given location. Each designated celebrity place on a tour may be annotated by associated profile information, either for the real estate property itself, or for a celebrity owner or celebrity visitors.

Overview

In the following description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the invention. It will be apparent, however, to one skilled in the art that the invention can be practiced without these specific details. In other instances, structures, devices, activities, and methods are shown using schematics, use cases, and/or flow diagrams in order to avoid obscuring the invention. Although the following description contains many specifics for the purposes of illustration, anyone skilled in the art will appreciate that many variations and/or alterations to suggested details are within the scope of the present invention. Similarly, although many of the features of the present invention are

described in terms of each other, or in conjunction with each other, one skilled in the art will appreciate that many of these features can be provided independently of other features. Accordingly, this description of the invention is set forth without any loss of generality to, and without imposing limitations upon, the invention.

Broadly, embodiments of the present invention relate to systems and methods for generating an interactive digital celebrity map tour guide, thus enabling celebrity seekers, or users of the system, to visit celebrity places of interest based on their preferences, and to report and receive notifications on celebrity sightings. A digital celebrity map may be displayed through a client application on a user device such as a smart phone, a tablet, or a personal computer. On the other hand, celebrity related databases, and tour generation or sighting verification algorithms may reside on one or more dedicated servers, possibly hosted in the cloud. Embodiments of the present invention allow a user of the system to search for and navigate to celebrity places or geolocations such as residences, sighting locations, and hotspots. The user may bookmark or favorite celebrities and celebrity geolocations, and browse through celebrity profiles as well as lists of different types of celebrity geolocations. In addition, a celebrity-inspired social network platform is provided for users to check-in at celebrity locations they visit, to report, confirm, or verify celebrity sightings, and to receive sighting notifications in real-time. Users may also rate celebrities or participate in other celebrity-focused polls.

More particularly, in a system implemented according to one embodiment of the present invention, a user's own position or geolocation is placed on a digital map displayed through a client application installed on a user device. Celebrity places or geolocations within a map area surrounding the user geolocation are then retrieved from celebrity databases hosted on a server, and displayed accordingly. If celebrities associated with the displayed celebrity geolocations are unfamiliar to the user, the user may choose to browse associated celebrity profiles or real estate listings to obtain more information.

Once celebrity geolocations are displayed in the celebrity map, a user may choose to follow one of several curated or guided tours. Such curated tours may be pre-defined, or customized according to filtering criteria selected by the user. For example, the user may wish to see the most number of celebrity homes within the proximity of his or her own geolocation. Alternatively, the user may wish to create a personalized tour of all types of celebrity geolocations associated with a selected set of favorite celebrities. Tour generation algorithms located in the server send tours generated according to user-selected or default filtering criteria to the user device, and navigation directions may be drawn on the map directly or described textually as step-by-step instructions. Some exemplary filtering criteria include celebrity name, celebrity status, celebrity rating, celebrity geolocation type, and distance of a celebrity geolocation from the user geolocation.

In addition to displaying celebrity geolocations and generating customized celebrity tours, the inventors of the present invention have created methods and systems that allow users to check-in at celebrity geolocations, thus recording a user history of being physically present at popular celebrity spots. The user may further browse through lists of recent celebrity sightings and report their own sightings of celebrities, where such sighting reports may comprise images and comments. User-generated sighting reports may be cross-checked or verified by other users, where each user may be associated with a trust or credibility score, a periodically updated metric measuring how likely a celebrity sighting reported by the user is credible. Celebrity sighting reports are also pulled from digital media sources available on the Internet. Celebrity sighting reports from both digital media sources and from users of the system are collected by the central server, and notifications may be broadcasted in real-time to remind users of potential celebrity sightings near them.

Apart from celebrity sighting reports, the inventors of the present invention have also created methods and systems to rate celebrities in terms of their general star power, popularity, influence, talent, bankability, or even notoriety, to create real-time celebrity standings based on both current and historical data. Such a celebrity rating system enables the user to pick up on new and upcoming stars, to find celebrities who have been popular for extended periods of times, and to search for celebrities who are in trend for one or more particular reasons.

To ensure celebrity maps, curated celebrity tours, celebrity sightings, and celebrity ratings thus provided to the user are as accurate and timely as possible, embodiments of the present invention periodically extract celebrity-related news from a diverse selection of digital media sources and social networking websites to initiate, update, and maintain various data repositories. For example, one feature of the present invention is its ability to plug into social media APIs such as Google News API to search for reports of celebrity sightings and add them as historical sightings to celebrity repositories.

VELVET ROPES is a trademark name carrying embodiments of the present invention, and hence, the aforementioned trademark name may be interchangeably used in the specification and drawing to refer to the products/services offered by embodiments of the present invention. The term VELVET ROPES may also be used in this specification to describe the overall system and processes of the invention, as well as the company that provides such services. With reference to the figures, embodiments of the present invention are now described in detail.

System Architecture

FIG. **1** shows a schematic diagram of a network configuration **100** for practicing one embodiment of the present invention. Digital media source **110** may be connected to a VELVET ROPES server or platform **150** through communication link or network **115**. Digital media source **110** includes both traditional media outlets and social media websites. Some exemplary digital media sources include, but are not limited to, TMZ, JustJared, PerezHilton, Facebook, Twitter, Photobucket, Flickr, and Instagram. VELVET ROPES server **150** periodically retrieves celebrity news and other celebrity-related information from digital media source **110**, to initiate, update, and maintain its celebrity data repositories.

Moreover, VELVET ROPES server **150** receives user requests and uploads from VELVET ROPES client applications installed on user devices **120** and **130**. In return, VELVET ROPES server **150** provides celebrity maps, generated celebrity tours, as well as other related information in the downlink direction. Mobile user devices **120** are connected to VELVET ROPES server or platform **150** through communication link **125**, while personal computers **130** are connected to VELVET ROPES server or platform **150** through communication link **135**. A mobile user device may be a smart phone, a tablet, a portable GPS navigator, a dedicated hand-held device, or a wearable device, such as a watch or smart glasses. A personal computer may refer to a desktop computer, a laptop computer, or a user terminal.

Communication links **115**, **125**, **135** may be wireless or wired, and may employ technologies and protocols comprising Ethernet technology, Local Area network (LAN), Wide Area Network (WAN), an optical network, and the like.

More specifically, VELVET ROPES server **150** is a platform for storing celebrity databases, for providing navigation directions and curated tours to user devices, and for providing celebrity related information and notifications to user devices, possibly in real-time. In some embodiments, VELVET ROPES Server **150** is a distributed system. For example, databases and processing algorithms may be located on different devices, and tour generation, sighting verification, and celebrity rating may also be implemented separately. Alternatively, different celebrity data repositories may be implemented to serve users from different geographical areas separately. A Hollywood server and a New York City server may each contain distinctive celebrity information in addition to shared data and algorithms. In some embodiments, VELVET ROPES server **150** is hosted in the cloud. In some embodiments, VELVET ROPES server **150** may be partially or fully implemented directly on a user device, such as a mobile user device or a personal computer. Although local installations of the VELVET ROPES server may remove remote connectivity requirements in the network configuration **100**, local installations of the VELVET ROPES server **150** may be subjected to additional software or hardware constraints.

FIG. **2** is a schematic diagram **200** of a VELVET ROPES server **250** for creating a celebrity map tour guide, according to one embodiment of the present invention. In this embodiment, VELVET ROPES server **250** comprises a processor **260**, a memory **270** that stores program code implementing the invention, and data repository **280** containing linked databases. In some other embodiments, VELVET ROPES server or platform **250** may be alternatively hosted in the cloud, instead of being implemented as a dedicated server. VELVET ROPES server **250** is responsible for retrieving celebrity news and other related celebrity information from digital media **210** to update and maintain data repository **280**. VELVET ROPES server **250** further receives user uploads and requests from user device **220**, while also providing mapping information, navigation directions, curated tours, celebrity related information, and notifications to user device **220**. In some embodiments, VELVET ROPES server **250** also provides user-reported celebrity information including sighting information to digital media **210**. For example, user-reported celebrity sightings that have been verified or confirmed may be posted by the VELVET ROPES system to a social media platform such as Twitter.

Data repository **280** within VELVET ROPES server **250** is comprised of multiple databases, each individually indexed and organized according to the type of contents contained, and all inter-related or linked through celebrity identities or other key values. Four exemplary databases shown in this particular embodiment of the invention are celebrities database **282**, celebrity geolocations database **284**, sightings database **286**, and images database **288**. In some embodiments, data repository **280** may further include a user database for storing user information and comments, an image source database for storing image metadata including photographer or publisher names, a ratings database for storing celebrity rating information, and other similar databases for organizing relevant celebrity-related information.

Celebrity database **282** contains records or profiles of celebrities past and present. A celebrity refers to a person well known to the public, or those who are often associated with fame and attention in the media. Groups of people, animals, or even fictional characters can also achieve celebrity status. Some examples of celebrities include, but are not limited to, entertainment stars, pro-athletes, artists, musicians, models, fashionistas, political figures, royalty, best-selling authors, prominent scientists, and international entrepreneurs. A legacy, legend, or legendary celebrity is one who is deceased. A celebrity profile may contain any personal and/or professional information regarding a given celebrity. For instance, a celebrity profile may include information on the celebrity's early life, career, personal life, filmography, awards received, and future projects. Such celebrity profiles may be stored explicitly within celebrity database **282**, or may be linked through celebrity database **282** to some external digital media source **210**, such as Wikipedia. Furthermore, celebrity profiles may include real estate properties currently or previously owned by the celebrity. One of such real estate properties may be identified as a primary residence.

Celebrity geolocations database **284** contains different types of celebrity geolocations or places, each linked with one or more celebrities within celebrities database **282**. A celebrity geolocation is a geographical location associated with one or more celebrities. A celebrity geolocation associated with a particular celebrity may refer to any geographical locations where the celebrity may have lived, worked, visited, or even mentioned during shows, interviews, or in other types of media, including social media. Some exemplary celebrity geolocations include residences and other types of real estate properties owned or leased by the celebrity, sighting locations where the celebrity has been seen, and hotspots that the celebrity frequents. Celebrity hotspots are popular places that a celebrity frequently visits, and where celebrity sightings often take place. Some exemplary celebrity hotspots include hotels, bars, clubs, lounges, restaurants, fashion shops, and gyms. Celebrity hotspots may further refer to locations where celebrities have made appearances, or filmed movies or shows. In other words, a celebrity hotspot may also be a celebrity sighting location. Each celebrity geolocation is associated with either an explicit address, or a set of geographical coordinates that can identify the physical location or position of the place. In addition, depending on its type, each celebrity geolocation may be associated with different categories of profile information. For example, a celebrity residence record may be associated with one or more celebrities who have been past or present owners or tenants, and may further contain information such as costs of the residence during past transaction, current listing price, last purchase price, monthly mortgage based on last purchase price, year the residence was built or remodeled, number of bathrooms and bedrooms contained, current realtor, descriptions of unique and distinguishing interior features, and even any urban legends connected to the place. On the other hand, a celebrity sighting location may be associated with a list of sighting records stored in sightings database **286**, each containing at least a celebrity name and a sighting time. A celebrity sighting location may also be associated with summary statistics such as the number of distinct celebrity sightings that has occurred as this location, and any additional trivia information on the location itself. Similarly, a celebrity geolocation record for a celebrity hotspot may be linked to multiple celebrities within celebrities database **282**, while also containing information on the total number of visits each associated celebrity has paid to the place.

As previously discussed, sightings database **286** contains records of celebrity sightings, or celebrity spottings. A

celebrity sighting is an event where a celebrity is seen by one or more members of the public. Each celebrity sighting within sightings database **286** is associated with at least a celebrity name, a sighting location, and a sighting time. In some embodiments, a celebrity sighting may also be associated with the original reporting source of the sighting, images of and comments on the sighting, news reports or reviews on the event, or any other graphical or textual information relevant to the sighting event.

Images database **288** contains images of celebrities, celebrity geolocations, and celebrity sightings. Images database **288** may further contain user uploaded avatars. Images stored in images database **288** may be obtained by VELVET ROPES server **250** through image retrieval algorithms from different types of digital media source **210**, or by user uploads through user device **220**. Images thus organized may further include image metadata such as when the image was taken, name of celebrity captured, name of the photographer, publisher, or the user who has uploaded the image, and a classification for image content and characteristics. For example, one classification scheme may categorize an image into a portrait image of a celebrity, a sighting image, an inside view of a celebrity residence, or a panorama view of a celebrity hotspot. Another classification scheme may categorize images according to its size, resolution, and the type of camera used.

Although not shown explicitly in schematic diagram **200**, celebrities database **282**, celebrity geolocations database **284**, sightings database **286**, and images database **288** are linked and may be managed concurrently by a database management system, possibly implemented through processor **260** and memory **270**. For example, real estate properties stored in celebrity geolocations database **284** are each identified with one or more celebrities within celebrity database **282**. Celebrities database **282** may also contain relational tables linking past and present owners and tenants to the same house within celebrity geolocations database **284**. As an explicit example, if Christina Aguilera used to live at one particular residence but Steve Hermann lives there now instead, celebrities database **282** should be capable of providing such information to a user who is browsing this particular celebrity geolocation. In other words, when examining a particular celebrity residence, the user should be able to find out who lives there now, and who used to live there, while when searching for a particular celebrity, the user should be able to find both current and former residences for the celebrity.

Although shown as separate entities within FIG. **2**, in some embodiments, one or several databases within data repository **280** may be logically merged and implemented jointly. On the other hand, when VELVET ROPES server **250** is hosted in the cloud, data repository **280** may be physical distributed across multiple devices, with individual databases residing on separate storage mediums, while still linked logically regardless of their physical locations.

FIG. **3** is an embodiment of a user device **320** wherein the invention may be practiced. In this particular embodiment, user device **320** comprises a processor **330**, a memory **340** containing a VELVET ROPES client application **342** and an operating system **344**, and at least one input/output device **325**. User device **320** is connected through a wired or wireless network connection **355** to VELVET ROPES server **350**. User device **320** may also be referred to as a client device, a computing device, a computing appliance, or a user-operated device. It is generally in the form of a laptop, a desktop, a tablet, a smartphone, or the like. In some embodiments, VELVET ROPES client application **342** is a plug-in or add-on to existing digital map applications instead of a standalone application. VELVET ROPES client application **342** provides a user interface to users of the VELVET ROPES system to access services provided by the present invention.

Digital Celebrity Map and Celebrity Tour Generation

FIG. **4** is a user flow diagram **400** showing a method of generating a celebrity tour based on a user geolocation. A user geolocation is a geographical location associated with a user of the VELVET ROPES system. A user geolocation may be explicitly given by the user, through a VELVET ROPES client application located on a user device, as a street address, a local landmark, or a postal address, or the like. A user geolocation may also be determined automatically by a GPS module on the user device, or any other types of modules, devices, or algorithms capable of determining geographical locations through triangulation or similar positioning algorithms. Alternatively, the locator may reside on a VELVET ROPES server **250**, which receives approximate address inputs or location information from the user device, and further processes such information to resolve the user geolocation. A tour, curated tour, or tour guide is a route that traverses one or more celebrity geolocations, with navigation directions provided in a sequential order starting from a given location. Each designated celebrity place on a tour may be annotated by associated profile information, either for the real estate property itself, or for a celebrity owner or celebrity visitors.

Once a VELVET ROPES server **250** receives or resolves a user geolocation at step **420**, the VELVET ROPES system automatically determines a map area around the given user geolocation at step **430**. In some embodiments, the map area has a default radius around the given user geolocation, customized according to the display interface and display scale of the user device. In other embodiments, the map area is determined according to user selected travel modes. Celebrity geolocations within the map area are subsequently retrieved from VELVET ROPES data repository **280** at step **440**, and transmitted to the user device at step **450**, for display in graphical or textual form on the user device through a VELVET ROPES client application **342**. Celebrity geolocations may be pre-filtered by VELVET ROPES server **250** or VELVET ROPES application **342** to ensure the celebrity map display is legible. Once a user selects a set of celebrity geolocations to visit, a request for a tour is received by VELVET ROPES server **250** at step **460**. A tour is generated subsequently at step **470**, and the overall process terminates at step **480**. The generated celebrity tour may be sent to and displayed on the user device, so that the user may follow corresponding navigation directions to visit celebrity geolocations of interest to them.

In some embodiments of the present invention, VELVET ROPES server **250** comprises routing or tour generation algorithms that create a best tour path from the user geolocation through multiple celebrity geolocation destinations. Such algorithms determine optimal routes with respect to some predetermined metrics such as distance or travel time, subject to constraints on transportation modes and traffic conditions. An optimal tour path for driving may differ from an optimal tour path for biking or walking, depending on elevation changes and preferred road conditions. In such embodiment, mapping data may be stored internally, or external to the VELVET ROPES system. In some other embodiments, VELVET ROPES server **250** interfaces with external mapping APIs maintained by professional mapping service providers to obtain optimal tour paths.

Although not shown explicitly in FIG. **4**, in some embodiments of the present invention, the method of generating a celebrity tour further comprises steps to receive a report of a celebrity sighting from a user, to determine whether a credibility score of the user is above a threshold, and if so, add the received celebrity sighting to the VELVET ROPES data repository as an unverified sighting. In some other embodiments, the method of generating a celebrity tour further comprises steps to send a verification request to multiple users with an area around the location of the celebrity sighting, to receive one or more responses to the verification request from the multiple users, and to update the credibility score of the reporting user according to the received responses to the verification request. In yet some other embodiments, the method of generating a celebrity tour further comprises steps to receive an updated user geolocation, to update the map area according to the updated user geolocation, to determine whether at least one celebrity geolocation exists within the updated map area, and if so, to transmit a notification to the user.

FIG. **5** is an exemplary screenshot of a menu page **500** for a VELVET ROPES client application **342**, according to one embodiment of the present invention. Menu page **500** may be a home page personalized for the user, after the user successfully logs into the system.

Menu page **500** includes a user information panel **510**, a links panel **520**, a quick access panel **530**, a global settings option **550**, and an exit option **560**. User information panel **510** displays full user name **512**, username or handle **514**, user avatar **518**, and edit option **516**. Similar to general social networks, username or handle **514** can be used to call out, mention, or follow the user, to send the user a message, or to link to the user's profile and favorites. In some embodiments, a hyperlink with username **514** leads to a separate display page where public user profile can be viewed, thus allowing users with similar celebrity preferences to find and befriend each other if desired. User avatar **518** is a user-uploaded image, and may be used as a map marker to indicate a user geolocation in a digital celebrity map. Edit option **516** may link to a separate page for user information update and verification. In some embodiments where a user can access the VELVET ROPES system without having an account or explicitly logging in, user information panel **510** may further include options for retrieving help, for signing up for service, and for logging into the service.

Links panel **520** provides hyperlinks **521** to a celebrity places page, **522** to a favorites page, **523** to a sightings page, **524** to a hotspots page, and **525** to a notifications page, each of which will be described in more detail hereafter with respect to subsequent figures.

Quick access panel **530** facilitates user check-in and sighting reports. In some embodiments, invocation of hyperlink option **531** leads to a list of places where the user has previously checked-in. Each check-in may be associated with a time, geolocation, an image, or user comments. In this particular embodiment, the user has checked in at 21 places. Similarly, invocation of hyperlink option **533** may lead to a list of celebrity sightings the user has reported, each with associated time, location, celebrity name, or images and comments. In this particular embodiments, the user has reported 31 celebrity sightings. Additionally, invocating option **532** allows the user to check in at his or her current location, while invocating option **534** allows the user to report a current celebrity sighting.

Global settings option **550** and exit option **560** are general purpose setting configuration options. In some embodiments, global settings option **550** brings up a settings page for the VELVET ROPES client application, allowing the user to modify general preferences such as user profile, display formats, language for the application interface, location and privacy service on the user device, or management of cache memory. Exit Option **560** may allow the user to close the menu page **550** and view a celebrity map directly.

FIG. **6** is an exemplary screenshot of a celebrity places page **600** containing a celebrity map, implemented according to one embodiment of the present invention. Page **600** includes a navigation panel **620** with a clickable row of tabs. Tab **621** is highlighted here and links to the current page, tab **622** links to the favorites page, tab **623** links to the sightings page, tab **624** links to the hotspots page, and tab **625** links to the notifications page. Map panel **630** shows the user's own position or geolocation **631**, together with celebrity places as represented by various celebrity avatars. Search panel **640** allows the user to search for celebrity places near his or her own location, while results panel **650** lists celebrities who are currently shown in map panel **630**.

In some embodiments, celebrity places or celebrity geolocations refer to celebrity residences or homes only. In other embodiments such as the one shown in FIG. **6**, celebrity places or celebrity geolocations include celebrity residences, sighting locations, hotspots, or any other types of geolocations associated with one or more celebrities. In this example, six celebrity places are drawn with celebrity avatars, although other location markers such as colored or shaped pins may be used as well. Furthermore, each celebrity avatar may be encircled with distinctive colors or shades to indicate differences in the types of these celebrity places. For example, an avatar for Alec Baldwin at celebrity place **632** may be encircled with one color to indicate that he once lived here, but no longer owns this home at this particular location. An avatar for Miley Cyrus at celebrity place **633** may be encircled with another color to indicate that this is a current home for her. Correspondingly, items **652** and **653** within results panel **650** show celebrity names Alec Baldwin and Miley Cyrus, with a single-line preview of information on celebrity places **632** and **633**. In the case where both past and present owners of a residence are celebrities, the present owner's avatar may be displayed within celebrity map **630**, or the list of owners may be checked against the user's favorites so that the avatar of the celebrity of most interest to the user is displayed instead. In some embodiments where a touchscreen is available on a user device, an item within results panel **650** may be removed or hidden by a swiping gesture, and the corresponding avatar within map panel **630** would be removed as well.

Additionally, an avatar for Marilyn Monroe shown for celebrity place **635** may be encircled with a third color or shade to indicate that it was owned by a legacy celebrity, who is now deceased. An avatar for Morgan Freeman shown at celebrity place **634** may be encircled with a fourth color or a shade to indicate that it is a hotspot that Morgan Freeman likes to stop by. As celebrity hotspots are often public venues visited by not just one but many celebrities, in some embodiments, hotspot **634** may be labeled with a pin instead of an avatar, or an avatar of the place itself rather than the avatar of visiting celebrities. Invocating a linked item within results panel **650** corresponding to hotspot **634** may then lead to a list of celebrities who have paid visits to this place before. Moreover, an avatar for Tom Hiddleston shown at celebrity place **636** may be encircled with yet another color or shade to indicate that this is a place where Tom Hiddleston has made appearances and has been sighted by the media or the public.

While celebrity map **630** may be displayed automatically when celebrity places page **600** is opened by the user, such automatic display may depend on default values set by the VELVET ROPES system, or by the user. For example, a walking figure shown as icon **639** indicates that the user prefers to view a map area traversable on foot within a reasonable amount of time, while label **638** specifies a 2.5-mile radius around the user geolocation **631** for drawing the map area. In some embodiments of the VELVET ROPES system, transportation mode may be selected by clicking on icon **639**, and map area **630** would change in scale accordingly. Similarly, the size of the map area may be changed explicitly by selecting option **638**.

To generate celebrity map **630**, the user device on which a VELVET ROPES client application resides first determines user geolocation **631**, through a dedicated hardware positioning module, or through positioning algorithms implemented on the user device. User location information, together with other optional inputs such as map radius and dominate transportation modes are uploaded to a VELVET ROPES server, which in turn searches through one or more databases within its data repository to determine celebrity places within the map area, for display within celebrity map **630** and results panel **650**. Similarly, when a search is requested by the user through search field **640**, the search request is sent and processed by the VELVET ROPES server. Depending on the number of celebrity places found within the map area, the VELVET ROPES server or the VELVET ROPES client application may intelligently filter search results, so that the map display is legible. Alternatively, a full list of search results may be sent back to the VELVET ROPES client application, for listing within results panel **650**, while only a selected set of celebrity places is displayed graphically within map area **630**. In some embodiments, the user may click on individual items within results list **650**, and only selected celebrity places are displayed within map panel **630**.

Although not shown explicitly in FIG. **6**, items in the results panel **650** may be scrolled up and down, thus allowing access to the full list within a limited display screen. Moreover, in this embodiment of the invention, there are three floating buttons **660**, **670** and **680** located at the bottom of the celebrity places page **600**. Invoking tour button **660** leads to a tours page **700** as shown in FIG. **7**, engaging the user to select or set criteria for automatically generating a tour to celebrity places displayed within map **630**; invoking menu button **670** takes the user back to menu page **500** shown in FIG. **5**; invoking filters button **680** takes the user to an interface **900** as shown in FIG. **9** for filtering celebrity places displayed within map **630**.

FIG. **7** is an exemplary screenshot of a tours page **700**, for defining a celebrity tour according to one embodiment of the present invention. Through tours page **700**, the user may select a criterion for automatically generating a celebrity tour. For example, item **710** represents a most homes tour, where the largest number of celebrity residences shown in celebrity map **630** are included. Clicking on arrow **715** may take the user to a navigation page **800** as will be described subsequently with respect to FIG. **8**.

Similarly, the user may choose to see an A-List home tour where residences belonging to only A-List stars are included, a legends home tour where residences belonging to only deceased celebrities are included, a hotspots tour that covers only celebrity hotspots, or an all places tour, which includes all celebrity places displayed within map **630**. In addition, the user may click on arrow **725** within the Select from list option **720**, and choose from the list of celebrity places in results list **650**. The user may also click on arrow **735** within Favorites option **730** to choose celebrity places that the user has previously bookmarked, or places belonging to celebrities whom the user has previously bookmarked.

In this particular embodiment, once a tour criterion is selected by the user, the VELVET ROPES server generates a celebrity tour accordingly, with the user's current geolocation as the starting point. The generated tour is transmitted to the VELVET ROPES client application on the user device and displayed graphically within a celebrity map. In some other embodiments, the VELVET ROPES system may provide pre-defined tour routes starting from and ending at popular landmark locations, similar to existing bus tours. Such pre-defined tours may have a general theme, or cover a set of most popular celebrity places, and may be periodically updated to reflect current trends. For example, a Marvel celebrity tour in Hollywood may cover places related to celebrities who have played roles in Marvel's superhero movies; a Democrats tour in Washington D.C. may start from the Capital Hill and cover places related to political celebrities from the Democratic party; a teen pop tour in Atlanta may cover places related to teen pop stars who have made it to Billboard 100 in the past year. Such pre-defined tours may be pre-loaded into the VELVET ROPES client application, thus enabling offline tours when the user does not have network access.

In yet some other embodiments, a celebrity tour may be modified from pre-defined tours stored in the VELVET ROPES server. For example, a hotspots tour for celebrity places near a popular destination such as Hollywood Boulevard may be requested by many celebrity seekers everyday. Instead of repeatedly running routing algorithms, the VELVET ROPES server may simply modify an existing tour according to the requesting user's geolocation by adjusting the starting point and the order in which different celebrity places are visited. In some embodiments, such pre-defined tours are also pre-loaded into the VELVET ROPES client application, with tour modifications performed within the client application as well, again enabling offline tour generation when the user does not have network access.

As discussed previously with respect to FIG. **4**, a VELVET ROPES server may contain independent routing algorithms that determine a best celebrity tour path that minimizes a given cost function such as travel distance or time, subject to constraints on travel model and traffic conditions. A VELVET ROPES server may also interface with external mapping APIs maintained by professional mapping service providers to obtain optimal tour paths.

FIG. **8** is an exemplary screenshot of a celebrity places page **800** where a tour path **840** for a most homes tour is displayed graphically, according to one embodiment of the present invention. In this example, celebrity hotspot **834** and sighting location **836** are excluded from this particular tour since they are not celebrity residences. In some examples, a sighting location may also be a celebrity residence.

As the user chooses a most homes tour **710** from tours page **700**, tour path **840** is drawn graphically within the map **830** to take the user from his or her current geolocation **831**, to the three celebrity homes within the map area. Display panel **844** indicates the type of tour selected, while icon **839** shows that the user has chosen to take the tour on foot. Observe that tour path **840** traverses from the user's current geolocation **831** to celebrity residence **832**, **833**, and **835**, in this particular order. An alternative tour path going from the user's current geolocation **831** to celebrity residences in the order of **835**, **833**, and **832** would cover approximately the same distance, although the end location for the two tours

are different. Thus, in some embodiments, multiple tour paths may be presented to the user using different colors or shades within map area **830**, with one tour path considered as the default, and the user may click on any portion of a tour path to select that particular path for use. Once a particular tour path is selected, celebrity places list **850** is updated accordingly, so that celebrity places are arranged according to their orders within the tour path. Clicking start button **842** then initiates a navigation process, where a full page view of the celebrity map may be displayed as shown in FIG. **10**.

FIG. **9** is an exemplary filter page **900** for filtering celebrity places within a given map area, according to one embodiment of the present invention. In cities such as Hollywood and Beverly Hills where celebrity places are very dense, even a small map area can contain a large number of celebrity places. Although the VELVET ROPES system may intelligently filter the set of all celebrity places within a given area, filter page **900** allows the user to pick and choose celebrity places to be displayed. For example, celebrity places may be filtered by active time for the celebrity, where a celebrity may be a legacy, legend, or legendary celebrity or a currently active celebrity. The user may also choose a particular active period for the celebrity, thus enabling customized searches for celebrities who were popular in the past but may have become inactive in the industry. Clicking on arrow **916** may invoke a pop-up calendar for the to user to choose a desired active period. In this particular example, the user has chosen to see only currently active celebrities, as indicated by checkmark **915**. Nonetheless, the choices are not mutually exclusive.

Additionally, the user may choose to filter celebrity places by a general geographical location, for example, between Los Angeles and New York. Such a feature may be useful in embodiments where celebrity databases are implemented according to different geographical areas. Such a feature may also be useful in cases where data repositories within the VELVET ROPES server are downloaded by geographical area for local offline use by the VELVET ROPES client application. The user may further choose to filter celebrity places by type, where for example, homes currently and previously owned by a celebrity are selected for display.

As part of filter page **900**, option **980** allows the user to remove all filtering criteria, while option **985** confirms filer selections, and option **990** closes the filter page.

FIG. **10** is an exemplary screenshot of a full page view of a navigation map page **1000**, with a selected tour path embedded according to one embodiment of the present invention. Clicking on start button **842** within celebrity places page **800** may activate this navigation map. Observe that map area **1030** is larger than map area **830**, although both are drawn with the same scale. In some embodiments, map area **1030** is scaled automatically to maximize the clarity of the tour path itself Additionally, zoom buttons **1005** and **1010** enable the user to view the navigation map at a scale appropriate to the size of the display screen and according to user preferences. In some embodiments where the user input device includes a touchscreen, the user may pinch or un-pinch the map to scale accordingly.

In this particular embodiment, next step panel **1020** displays the next navigation direction to be followed by the user. Map marker **1031** indicates the current user geolocation, as determined in real-time by the user device. The dashed portion **1040** of the tour path indicates the progress of the tour by referring to the currently traversed fragment of the tour path, from the current user geolocation to the next upcoming celebrity place. By comparison, solid portions of the tour path refer to other path fragments, which may include those that have already been traversed, such as path fragment **1041**. When the user does not correctly follow the navigation directions, the VELVET ROPES system is capable of rerouting the user to the next celebrity place, or regenerating the tour entirely, starting from the user's new geolocation. Observe that the problem of routing to the next celebrity place is the same as finding an optimal path from the current location to a single destination.

As part of navigation map page **1000**, option **1050** may return the user to celebrity places page **700**, while the List steps option **1060** takes the user to view step-by-step navigations directions in detail, as shall be discussed next.

FIG. **11** is an exemplary screenshot of a navigation directions page **1100** presented to the user as a result of tapping a "List steps" link on navigation map page **1000**. Navigation directions page **1100** provides step-by-step directions to celebrity places within the selected tour. While a next step panel **1120** prompts the user on how to proceed next, a related information panel **1130** provides information on the entire celebrity tour. For example, label **1131** indicates that the overall celebrity tour would take 5 minutes to drive through without stopping, label **1132** indicates that the overall celebrity tour would take 28 minutes on foot, again without stopping at any of the locations, while label **1133** indicates that the tour covers 1.4 miles in distance. Such summary estimates allow the user to adjust his or her itinerary if necessary. Alternatively, in some embodiments, related information panel **1130** provides information on the next celebrity place on the tour. Thus, labels **1131**, **1132**, and **1133** refer to travel times and distance to the next stop on the tour, instead of the last home that ends the tour. More importantly, navigation directions page **1100** includes a directions panel **1140**, listing travel directions as well as distances in between the sequence of turning points. As there are multiple destinations within the tour, statement such as **1146** are provided to indicate when a particular celebrity place will be reached. Additionally, visual cues such as arrow **1145** are also provided for upcoming turns, and option **1150** is provided for hiding this navigation directions page **110** to return to the map view instead.

FIGS. **12**A and **12**B are exemplary screenshots of a selected celebrity place page, accessible through any celebrity map or celebrity places list. When a celebrity avatar or map marker pin is chosen by the user on a celebrity map, or when items in a celebrity places list such as **650** or **850** is selected, information on the corresponding celebrity place may be presented to the user in a scrollable page as shown in two parts **1200** and **1250** here. Correspondingly, tapping on a return option **1249** may return the user to the previous page.

In some embodiments, various panels are provided in the selected celebrity place page, in addition to a map view with or without routing information staring from the current user geolocation. In this particular example shown in FIGS. **12**A and **12**B, a celebrity information panel **1210** shows a photo for the celebrity associated with this celebrity place, as well as the name of the celebrity and an address for the place. A favorite button **1220** allows the user to bookmark this particular location for future views. In some embodiments, a like button may be available, for a user to like or vote for a celebrity such as Alec Baldwin here, a house, a picture of a celebrity, or any individual pictures of a house. In addition, if the selected place is associated with multiple celebrities who have been past owners or tenants, some or all of the celebrity names may be listed within celebrity information panel **1210**.

Related information panel **1230** provides abbreviated information on the selected celebrity place. In this particular example, travel times and the current valuation for the house is shown. Other trivia information that may be displayed within related information panel **1230** include, but are not limited to, travel distance, year built, number of bedrooms and baths, square footage, price per square foot, price for last purchase, monthly mortgage based on price for last purchase, whether the home is listed for sale, or even whether the place has a swimming pool or tennis court. In some embodiments, related information panel **1230** may be scrollable from left to right, or be expandable with a dropdown list, such that more trivia information can be displayed within the panel on a limited display device.

Links panel **1240** provides a list of relevant links on the selected celebrity place and the one or more celebrities associated with the place. A navigation option **1242** leads to a navigation view such as shown in FIG. **10**, or an explicit navigation page such as shown in FIG. **11**. A Check-in option **1244** indicates that 2,918 check-ins has been submitted to the VELVET ROPES system at this location, and further allows the present user to check-in at this place if desired. In some embodiments, selecting option **1244** leads to a list of hyperlinked users in chronological or alphabetical order, so the present user may see who has checked in at this particular location at what time, their comments if any, and when the most recent check-ins has occurred. The present user may even exchange private messages with other users who has just checked-in at this celebrity place to see if there are tips on where to find the best view for taking photographs of the place. Moreover, a celebrity profile option **1246** leads to a full profile page for the current celebrity, as will be describe with reference to FIG. **13**. When multiple celebrities are associated with the selected place, there may be multiple celebrity profile links correspondingly.

As photographs are the best way to preview a tourist attraction, a photos panel **1260** links to a photo gallery of the selected celebrity place. Photos within the gallery may be stored in and loaded from an image database within a VELVET ROPES data repository. Each photo may have been submitted by a professional photographer, an individual user of the system who have visited the selected place before, or may have been collected by the VELVET ROPES system from online digital media sources. A user may upload his or her own photo of this place by selecting the add option **1265**.

Although user comments may be accessible through check-in option **1244** in some embodiments of the present invention, in some other embodiments, past user comments may be be displayed in chronological order directly within a comments panel **1270**, as shown in page **1250**. The present user may also add his or her comments by selecting the add comments option **1275**.

FIG. **13** is an exemplary screenshot of a celebrity profile page **1300**. In some embodiments, celebrity profiles are accessible through a celebrity profile option such as **1246**, or through a favorite list. In this particular example, the celebrity's full name **1310** Alec Baldwin is displayed at the top of the page, and an image for Alec Baldwin is displayed correspondingly within celebrity profile photo panel **1315**. Such profile photos may be stored in a celebrities or images database within a VELVET ROPES data repository. A favorite button **1312** allows the user to bookmark this particular celebrity for future views.

Menu panel **1320** includes a row of clickable tabs, each providing access to appropriate information on the celebrity of interest, Alec Baldwin. In this example, about tab **1321** is highlighted. Correspondingly, personal and professional information on Alec Baldwin are displayed within information panel **1330**. Celebrity profile information thus displayed may be stored explicitly within and loaded from a VELVET ROPES celebrity database. Alternatively, celebrity profiles may be loaded from external media sources such as Wikipedia. Additionally, homes tab **1322** may invoke the display of a list of homes owned by Alec Baldwin, as shall be described with respect to FIG. **14**. Photos tab **1323** links to a full photo gallery, hotspots tab **1324** links to a list of Alec Baldwin's hotspots, while feed tab **1325** links to a stream feed on news, comments, and notifications regarding Alec Baldwin. Furthermore, floating icon **1380** allows the user to upload his or her own photos for the celebrity.

FIG. **14** is an exemplary screenshot of a celebrity's homes page **1400**, accessible through homes tab **1322**, according to one embodiment of the present invention. In this example, all residential properties previously or currently owned by Alec Baldwin are listed. Information panels **1410** and **1450** provide explicit addresses for Alec's homes, with corresponding map previews **1430** and **1470**, and photo gallery previews **1420** and **1460**. In some embodiments, more facts and features are provided for each property through the information panels. For example, price estimates, ownership history, transaction history, year built, square footage, number of bedrooms and baths, and nearby schools and neighborhoods may all be itemized into a real estate profile for display here. In cases where the celebrity owns not only residential real estates but also commercial properties such as restaurants, bars, and hotels, page **1400** may be viewed as a real estate page instead of a homes page, and may contain additional corresponding information such as purchase date, business type and hours, specialty services provided, and the like. Option **1480** closes the page **1400** and returns the display to celebrity profile page **1300**.

FIG. **15** is an exemplary screenshot of a celebrity's hotspots page **1500**, accessible through hotspots tab **1324**, according to one embodiment of the present invention. In this particular embodiment, a map panel **1510** is provided to show Alec's hotspots within a 2.5-mile radius of the user's current geolocation **1551**, as indicated by the label **1512**. Here each hotspot is pinned by a photo avatar. Although not shown explicitly, each photo avatar or similar map marker may be encircled with different colors or shades to distinguish the types of hotspots shown. For example, service venues such as restaurants and bars may be marked with one color, while performance venues such as theatres and stadiums may be marked with another. Details on each hotspot shown in map **1510** are provided through list **1520**. Entries such as **1522** and **1524** may be listed in alphabetical order, or according to their distances from user's current location **1551**. In some embodiments, entries within list **1520** are ordered according to their popularity, in terms of total number of times Alec Baldwin has visited in the past. Each entry may be further linked to a selected celebrity hotspot page, structured and implemented similar to the selected celebrity place page shown in FIGS. **12**A and **12**B.

Although hotspots shown in page **1500** are limited to a map area around the user's current geolocation, in some embodiments, celebrity's hotspots page **1500** may be structured similar to celebrity's homes page **1400**, such that hotspots within a selected city or all hotspots for a given celebrity are listed. As a result, the user may browse through all hotspots frequented by a chosen celebrity, obtain information on their locations and profiles, and plan trips or tours accordingly.

FIG. **16** is an exemplary screenshot of a favorites page **1600**, showing a list of bookmarked celebrity places, according to one embodiment of the present invention. Here favorites panel **1620** lists the user's favorite celebrity places in a default alphabetical order, and the displayed list may be updates as a user inputs through search field **1610** to look for a particular place in his or her favorite list. In some embodiments, entries within list **1620** are ordered according to when the user has bookmarked each place. Alternatively, entries within the list may be ordered by a popularity score, where celebrity places with larger number of check-ins, celebrity visits, images, comments, or reviews are ranked higher. Entries within the list may also be ordered according to their distances to the user's current location, where the first item within the list would take the shortest amount of time to reach if the user decides to visit places within his or her favorites list. Additionally, items within the list may be removed by a swipe followed by a confirmation using icon **1640**.

Observe that all entries within favorites page **1600** are celebrity hotspots, each with an explicit address and a number of historical visits. First, in this example, each celebrity hotspot is associated with a single celebrity only. In other words, the same address may appear as multiple entries in list **1620**, each time associated with a different celebrity, and each time having a different number of historical visits. Alternatively, each celebrity hotspot may be associated with all celebrities who have visited, where the number of historical visits is an accumulated total, thus reflecting a higher probability of sighting one of the associated celebrities at this location. Second, floating filter icon **1680** enables the filtering of favorite celebrity places through a filter page similar to the one shown in FIG. **9**. In this particular example, only hotspots are selected for display. Alternatively, all favorite celebrity places may be displayed. As the user may also bookmark individual celebrities, favorite list **1620** may contain individual celebrities as well.

Celebrity Sightings

FIG. **17** is an exemplary screenshot of a sightings page **1700** presented to the user by a VELVET ROPES client application, according to one embodiment of the present invention. Similar to celebrity places page **600**, celebrity sighting locations within a 2.5-mile radius around the user's current geolocation **1701** are displayed within map panel **1710**. In this embodiment, a search field **1720** allows the user to refresh and search for most recent sightings within his or her proximity. In some embodiments, the user may input celebrity names within search field **1720** to look for recent sightings of a particular celebrity nearby.

A celebrity sighting is the event where a celebrity is seen or spotted, by the media or one or more members of the general public. A sighting or a sighting event is associated with at least a celebrity name, a sighting location and a sighting time. For example, if Jimmy Kimmel appears in a road show hosted at the Nokia Theatre in Los Angeles, and an image of him is time-stamped at capture then uploaded by a photographer, the VELVET ROPES system may process the image into a sighting event of Jimmy Kimmel, with corresponding location and time information. The image would be associated with this particular sighting event as well. Similarly, if a user runs into Miley Cyrus on Hollywood Boulevard and reports the event with an image or a text update, the VELVET ROPES system may process the user sighting report accordingly.

Within map panel **1710**, pins such as **1702** and **1704**, with or without celebrity avatars, are placed at sighting locations where one or more celebrities have been spotted. In cases where more than one celebrity has been spotted at a single sighting location, the avatar may correspond to the most recently sighted celebrity. Each sighing location shown in map **1710** is geo-tagged with an address or a set of geo-coordinates. For example, sighting location **1704**, corresponding to entry **1730**, may be reported by a photographer as the Nokia Theatre. Once in the VELVET ROPES system, the VELVET ROPES server searches for the Nokia Theatre in its databases to determine an explicit street address **1717**. In some embodiments, a user may input an address or a nearby named place or landmark when reporting a sighting event. Alternatively, the user device may determine and upload longitude and latitude information to the VELVET ROPES server, which in turn ties the geo-coordinates to a closest known street address such as **1717**. Additionally, time elapsed since the sighting has occurred is displayed as label **1716**, and sighting event may be ordered chronologically below the map area. The present user may further utilize add sightings icon **1740** to report his or her own celebrity sighting. By tapping this icon, the user can report a sighting, thus adding a pin onto the map. Filter icon **1750** allows the user to filter sighting events displayed in map area **1710**, according to filter criteria such as celebrity name, and the amount of time elapsed since the sighting has occurred.

FIG. **18** is an exemplary screenshot of a selected sighting location page **1800**, accessible by selecting a particular sighting result shown in map view or list view within page **1700**. A selected sighting location is similar to a selected celebrity place discussed with respected to FIGS. **12**A and **12**B. Once a sighting location such as **1704** is chosen by the user, sighting location page **1800** is presented to the user with a navigation path starting from the user's current geolocation **1806** to the corresponding selected sighting location **1807**. The user may choose to navigate to the selected sighting location through option **1832** within links panel **1830**. An information panel **1810** shows a photo of the selected place, in addition to its name and address. A favorite button allows the user to bookmark this particular location for future views. All past celebrity visitors who have reportedly been spotted as the selected location are listed within visitor information panel **1820**, possibly with time stamps, or historical number of sightings at this location. Links panel **1830** provides option **1832** to navigate to the select sighting location, option **1834** to see past check-ins by other users or to check-in at the selected location, and option **1836** to see a full profile of the sighting location.

FIGS. **19**A to **19**D are exemplary screenshots of pages for reporting celebrity sightings, accessible through add sightings icons **1740** or **1840**, implemented according to one embodiment of the present invention. Even though user sighting reports may only be credible to a certain extend, a platform such as VELVET ROPES enables users to build a fan community where dedicated celebrity sighting information may be shared across a large fan base, possibly in real-time. While social networking and media websites such as Twitter and TMZ are currently available for users to search for celebrity related information, for one, such information are not dedicated to sighting reports, thus celebrity seekers often have to sort through an overwhelming amount of irrelevant news to find any sighting updates of interest to them. For two, sighting information thus obtained are unlikely to be within the users' proximity, thus having little effect on the users' probability of spotting the reported celebrity themselves. By comparison, with the VELVET ROPES system, users may see multiple real-time sighting reports of the same celebrity within a small geographical

area, thus be able to follow such leads to meet the celebrity themselves. For example, if a user who is waiting to pick up a friend at the Los Angeles International Airport is notified of current sighting reports of Jennifer Lawrence, starting from a landing gate, to a coffee shop, to the luggage claim, the user may follow the information and wait to see the Hunger Games star instead of simply driving away when his or her friend shows up. With appropriate privacy and safety measures, the VELVET ROPES system provides an interactive sighting information platform.

To report a sighting, a user first searches through a list of celebrities on page **1900**, as shown in FIG. **19**A. Celebrities within the VELVET ROPES celebrity database are sorted, possibly by first name in alphabetical order. As the user inputs a celebrity name into search field **1910**, names that start with the user's input are displayed within scrollable list **1920**. Instead of typing out the full name for the celebrity, the user can directly click on the desired celebrity name once the name appears in the list. In some embodiments, an option is provided for the user to search for celebrities by last name. In some embodiments, all approximate name matches are returned in list **1920**, even if the user misspells the desired celebrity name. In some embodiments, the user may use filter button **1925** to filter celebrity names according to age, gender, race, nationality, occupation, years active, or similar personal information. In other words, even if the user can not recall the name of a spotted celebrity, the user may still find the celebrity from the VELVET ROPES database by cross-referencing other personal or professional information. Once the sighted celebrity is selected, a sighting location page **1930** is automatically evoked. Alternatively, the user may click on floating icon **1929** to cancel the sighting report process.

Upon invocation of sighting location page **1930** as shown in FIG. **19**B, the VELVET ROPES system may automatically attempt to determine the user's current geolocation. In some embodiments, through triangulation techniques, a set of geo-coordinates are established, and the closest street address such as address **1935** is suggested. Upon selection of suggested address **1935**, a sighting photo page **1980** may be automatically evoked. The user may also click on floating icon **1940** to return to the previous page, or on floating icon **1950** to cancel the sighting report process. If the user is unsatisfied with the suggested address, such as when the user is reporting a sighting event not in real-time but when he or she has returned home, an alternative address may be chosen through option **1936**, which evokes address page **1960**.

On page **1960** as shown in FIG. **19**C, the user may utilize search field **1965** to look up the street address of a named place or venue from the VELVET ROPES database. An on-screen keyboard **1979** may appear automatically when the user taps within search field **1965**. Alternatively, the user may search for street addresses directly. Search results are displayed within panel **1970**. Each search result is associated with at least a street address, and possibly a name or a photo. Additionally, each search result may be labeled with an icon to indicate the type of the geolocation. For example, a home symbol **1972** indicates that Mi Place is a residence such as a house a condo, while a hotspot symbol **1974** indicates that Miller Park South is a celebrity hotspot. Floating icon **1976** enables the user to return to the previous page without selecting an alternative address, while floating icon **1978** is only enabled when an alternative address is chosen, with a user tap on the enabled icon terminating the address search process and taking the user to the next sighting photo page **1980**. In some embodiments, Pages **1930** and **1960** are merged and displayed within a single page.

On page **1980** as shown in FIG. **19**D, the user may upload a photo and add a comment or a time stamp to the reported sighting event. In some embodiments, selecting Upload photo option **1982** opens an additional page where the user may browse through a local user device camera roll to select and upload one or more sighting photos, and to add tags or comments to each photo. In some embodiments, selecting Add a comment option **1984** brings about a separate page or a pop-up input window for the user to annotate the image or the sighting event itself. Additionally, the user may wish to use an Add time stamp option **1986** to provide an explicit time stamp to the sighting event. Selecting option **1986** may bring about a pop-up calendar and a corresponding clock where the user can select or input an approximate time, thus enabling non-real-time reporting of sighting events. When option **1986** is not utilized, a sighting event is automatically associated with the system time at which the sighting report is generated. As shall be discussed later, in some embodiments, each user-reported sighting requires verification from other non-reporting users if the reporting user's credibility score is poor. On the other hand, sighting report by a user with a high credibility score may be uploaded to the VELVET ROPES system directly, thus enabling non-real-time reporting, since successful cross-verification is less likely when a significant amount of time has passed since the sighting took place.

Celebrity Hotspots

FIG. **20** is an exemplary screenshot of a celebrity hotspots page **2000**, accessible through celebrity hotspot links such as option **524** or tab **624**. As discussed previously, celebrity hotspots are popular places that celebrities frequently visit, and where celebrity sightings often take place. Some exemplary hotspots include airports, hotels, bars, clubs, lounges, restaurants, fashion shops, and gyms. Celebrity hotspots may further refer to locations where celebrities have made appearances, or filmed movies or shows. A celebrity hotspot may be a celebrity sighting location concurrently.

Structured similarly to page **1500**, which is dedicated to hotspots frequented by a single celebrity, celebrity hotspots page **2000** contains a map panel **2010**, where celebrity hotspots within a 2.5-mile radius around the user's current geolocation **2011** are displayed, and a list panel **2050**, where profiles are provided for each hotspot location. Again, each photo avatar or similar map marker may be encircled with different colors or shades to distinguish the types of hotspots shown. For example, some users may be more interested in small, private venues such as restaurants, while other users may be more interested in larger public venues such as parks and theatres.

Entries within list **2050** are each associated with an explicit street address and a number of historical visits. In some embodiments, each celebrity hotspot is associated with a single celebrity only. In other embodiments such as here, each celebrity hotspot is associated with all celebrities who have visited, where the number of historical visits is an accumulated total, reflecting a higher probability of sighting any of the associated celebrity at this location. Entries within list **2050** may be listed in alphabetical order, according to their distances from user's current location **2011**, or according to their popularity, in terms of the total number of visits various celebrities have paid to this particular location, or the number of user image and comment uploads. Each map marker within map **2010** or entry within list **2050** may be further linked to a selected celebrity hotspots page, structured and implemented similar to the selected celebrity place page shown in FIGS. **12**A and **12**B.

Similar to celebrity places page **600**, multiple floating icons are provided at the bottom of celebrity hotspots page **2000** to enable tour generation and hotspot filtering. In this particular example, tour icon **2060** enables the user to select from pre-defined hotspot tours or to generate customized tours to visit a selected set of hotspots of interest. On the other hand, filter icon **2070** allows the user to filter celebrity hotspots displayed in map panel **2010**, according to filter criteria such as celebrity name, hotspot type, or thresholds on total number of celebrity visits to the place. Selecting or deselecting entries within list **2050** may turn on or off corresponding map markers shown in map panel **2010**.

Notifications

FIGS. **21**A and **21**B are exemplary screenshot of a scrollable feed or notifications page presented to the user, according to one embodiment of the present invention. In this example, separate portions of the notifications page are shown in two parts **2100** and **2150**. Each notification panel **2110**, **2120**, **2130**, **2160** and **2170** contains an exemplary news update broadcasted by the VELVET ROPES system to users who have enabled the service. Such notifications may be displayed in chronological order as indicated by time stamps **2111**, **2121**, **2131**, **2161** and **2171**.

News updates may be user generated, or collected by the VELVET ROPES system from various digital media sources. For example, notification **2110** posted by user Susan Lee is a sighting report of Tom Hiddleston, with a sighting time **2111**, a user comment **2112**, a sighting image **2113**, and a sighting location **2114**. Here sighting time **2111** is given as 2 minutes (ago), indicating that the sighting event has just occurred. Similarly, notification **2120** is a user sighting report pulled by the VELVET ROPES system from third-party social network Twitter. User Tweeter T may or may not be a user of the VELVET ROPES system, yet her sighting reports to the public domain is utilized by the VELVET ROPES system.

Notification **2130** is a celebrity report pulled by the VELVET ROPES system, again from Twitter. For this particular news update, the VELVET ROPES system monitors postings by verified celebrity accounts or handles on different social media platforms. By intelligently analyzing the content of a posting, the VELVET ROPES system determines whether a celebrity posting refers to an event where the celebrity makes a physical appearance at some known geolocation. If the analysis result is affirmative, the celebrity posting is broadcasted within the VELVET ROPES notification system to users who have enabled the service. In this example, Jimmy Kimmel attended a game by New York Mets and tweeted from Citi Field Stadium. Tapping on notification panel **2130** may lead to an in-app display of this particular tweet on Jimmy Kimmel's Twitter homepage.

Notification **2160** is a user check-in at an Adrien Brody residence, with user image and comment uploads. Notification **2170**, on the other hand, is a notification of celebrity activity. Celebrity activities broadly refer to any changes in a celebrity's current status. Examples include changes in residence, marital status, agency or label. Announcements on new concert tours, new shows, films, books, and the like are also relevant celebrity activities that would be broadcasted by the VELVET ROPES system.

Although not shown explicitly within FIGS. **21**A and **21**B, in some embodiments, a highlight of the background of a notification panel would signify that the item is new. The user may tap on each item to make it as read. Alternatively, upon being presented to the user, next time the fed is presented or refreshed, the item may be displayed with a regular background color. In addition, a user may filter the news feed through floating icon **2140**, according to criteria such as notification type and source. For example, the user may choose to receive only sighting reports, only celebrity activity notifications, or only user-generated sighting or check-in notifications from other VELVET ROPES users that they follow. The user may alternatively choose to receive only celebrity reports posted by verified celebrity accounts only.

Maintaining the VELVET ROPES Server and Databases

Referring now back to FIG. **2**, while the VELVET ROPES server produces interactive celebrity maps and provides services such as tour generation and sighting notifications, such services all rely on information stored in data repository **280**. When a VELVET ROPES server is first established, it may perform a deep search on all available digital media sources to built databases on existing celebrities and historical sighting events. Nonetheless, since new celebrities emerge and new sighting events occur on a daily basis, it is necessary to periodically or spontaneously update databases within repository **280** to ensure information contained therein are up to date and as accurate as possible.

Accordingly, FIG. **22** is a flow diagram **2200** for adding celebrities to VELVET ROPES celebrities database **282**, according to one embodiment of the present invention. The process as described by flow diagram **2200** may be run periodically through a time-based job scheduler according to a pre-defined update schedule, for example, on an hourly basis. Upon initialization at step **2202**, a VELVET ROPES server retrieves lists of currently trending people at step **2210**, possibly from digital media sources such as Twitter, MySpace, Mashable, Yahoo News, or E! Online. Some exemplary lists include currently trending actors, teen pop idols, musical artists, and authors. Explicit currently trending people lists such as provided by Google Trends are also acceptable. Names within each list are iterated through the subsequent steps in order. A given name currently under consideration is first checked against some general criteria to see if it refers to a celebrity at step **2220**. For example, it would be easy to verify using a quick web search that a person who is currently trending for being the victim of a recently happened terrorist attack is not a celebrity. If the result of the check at step **2220** is definitely negative, the process continues to step **2250**. If the result of the check at step **2220** is affirmative or uncertain, the process continues to step **2230**, where the name is checked against the VELVET ROPES celebrities database. Again, if the result is affirmative, the process continues to step **2250**, otherwise the name is added to a candidate list for later addition to the celebrities database at step **2240**. In some embodiments, steps **2220** and **2230** are combined into a single combined decision. The overall process terminates at step **2260** if all lists have been exhausted at step **2250**. In some embodiments, all names within the candidate list are added to the VELVET ROPES celebrities database automatically. In some other embodiments, the candidate celebrity list, once compiled, is sent to a VELVET ROPES system administrator, who examines each name manually to make final decisions on whether a candidate celebrity should be added to the VELVET ROPES celebrities database.

FIG. **23** is a flow diagram **2300** for adding celebrity images to VELVET ROPES images database **288**, according to one embodiment of the present invention. Again, the process as described by flow diagram **2300** may be run periodically according to a pre-defined update schedule, for example, on an hourly basis. Alternatively, a VELVET ROPES server may be set up to receive push notifications

from digital media sources, and the process described herein may be run whenever new images become available.

In some embodiments where the process described by flow diagram **2300** is performed periodically, upon initialization at step **2302**, the VELVET ROPES server uses a web crawler to spider or scrub stock photography providers at step **2310** to check whether new celebrity images are available. Exemplary stock photograph providers include Getty Images, Shutter Stock, AP Images, and Corbis Images. Photos thus retrieved often cover large and small entertainment events with the most talked about celebrities, and are tagged with celebrity names as well as event information. Each photo is then checked against the images database **288** at step **2320** to see whether it already exists in the VELVET ROPES system. If the result is negative, the process continues to step **2325**, where the photo is associated with a celebrity within celebrities database **282**, corresponding image description and photographer attribution are downloaded as image meta-data, and the photo is added to images database **288**. In cases where the photographed celebrity does not exist in VELVET ROPES celebrities database **282**, the celebrity name and corresponding image may be added to a candidate list again, for verification and addition to the system by a VELVET ROPES administrator later.

If the image currently under consideration already exists in images database **288**, or has been added to the database through step **2325**, corresponding image meta-data are analyzed at step **2330** to see whether location and time information are available. If the result is negative, the process continues to step **2370**, and the next retrieved image is considered until all retrieved images have been exhausted, ending the overall process at step **2390**. When location and time information are indeed available, the image currently under consideration represents a sighting event. Thus at step **2340**, the image is added to a celebrity sighting event, and sightings database **286** is updated accordingly. Once a sighting event has been added, the image source is checked at step **2350** to determine if it is reliable. For example, a known professional photographer would be a reliable source, whereas a new free-lance contributor would have questionable credibility. Step **2350** may be performed automatically through an intelligent verification algorithm, or manually by a VELVET ROPES administrator. For a reliable source, meta-data associated with the source would be updated at step **2365** to continue trust within the system. Conversely, meta-data associated with an unreliable source would be updated at step **2360** to discourage future trust. In some embodiments, meta-data associated with image sources include a trust or credibility score iteratively calculated based on historical data. In some embodiments, a credibility rating for the image is received from the image source, or a VELVET ROPES system administrator, and the credibility score of the image source is updated according to the received credibility rating for the image.

FIG. **24** is a flow diagram **2400** for adding celebrity sightings from digital media sources to a VELVET ROPES celebrity sightings database **286**, according to one embodiment of the present invention. In addition to periodic updates, a VELVET ROPES server may be set up to receive push notifications, and the process described herein may be run whenever new celebrity related postings become available. Upon initialization at step **2402**, the VELVET ROPES server connects to a digital media source at step **2410** to retrieve celebrity related news or postings at step **2420**. A digital media source may refer to traditional media outlets such as DailyMail, TMZ, and Splash News, or it may refer to social media platforms such as Twitter, MySpace, Facebook and Instagram. For social media platforms, the VELVET ROPES server may connect to available media APIs at step **2410**, and postings on such platforms may be time sensitive.

While celebrity news articles provided by traditional media outlets can be easily analyzed through their titles, taglines and keywords at step **2410** to determine the celebrity and event involved, the retrieval process for a social media platform could become resource inefficient if all feeds within a social media platform are examined. Thus, for postings on social media, the retrieval process at step **2420** may involve predefined steps or conditions. For example, in some embodiments, handles belonging to celebrities within the VELVET ROPES celebrities database are checked as part of the retrieval process to see if any one or more celebrities have announced where they currently are. In some embodiments, search and textual analysis are performed as part of the retrieval process to determine celebrity handles mentioned by other users of a social media platform when the celebrities have been spotted. In yet some embodiments, search and textual analysis are performed as part of the retrieval process to determine celebrity names mentioned by other users of a social media platform when the celebrities have been spotted. Any or all of the steps as described above may be used in parallel or in sequence to locate relevant celebrity related postings.

For each relevant celebrity related posting thus determined, contents of the celebrity related posting are analyzed at step **2430** to see whether location and time information are available. If the result is negative, the process continues to step **2480**, and the next retrieved celebrity related posting is considered until all retrieved postings have been exhausted, ending the overall process at step **2490**. When location and time information are available, the celebrity related posting currently under consideration represents a sighting event. Thus at step **2440**, the image is added to a celebrity sighting event, and sightings database **286** is updated accordingly. Once a sighting event has been added, the source of the original celebrity related posting is checked at step **2450** to determine if it is reliable. For traditional media outlets, the author of the retrieved news article may be taken as the source of the posting; for social media platforms, the celebrity or user who has made the posting may be taken as the source. Step **2450** may be performed automatically through an intelligent verification algorithm, or manually by a VELVET ROPES administrator. For a reliable source, meta-data associated with the source would be updated at step **2465** to continue trust within the system. Conversely, meta-data associated with an unreliable source would be updated at step **2460** to discourage future trust. In some embodiments, such meta-data associated with posting sources include a trust or credibility score iteratively calculated based on historical data.

In some embodiments, an additional step may be performed after step **2420** to determine if the celebrity has been mentioned in sources other than the one from which the celebrity related posting has been retrieved, and thus has been added to the system already. The process continues to step **2430** if the answer is negative, otherwise returns to step **2420** again to retrieve the next celebrity-related posting, if the celebrity has been mentioned elsewhere already.

Celebrity Sighting Reporting and Verification

While FIGS. **23** and **24** each refer to a process for adding new sighting events to a VELVET ROPES sightings database, FIG. **25** is a corresponding flow diagram **2500** for sending push notifications of a celebrity sighting event to a user, according to one embodiment of the present invention.

Upon initialization at step **2502**, the VELVET ROPES server examines a new sighting event added to the sightings database **286**. At step **2510**, the sighting time associated with the sighting event is checked to determine if the sighting event has happened in the last 24 hours. If the result is affirmative, user preferences and settings are checked at steps **2520** and **2530** to determine whether the user has push notifications enabled, as well as whether the celebrity involved in the sighting event is near the user's current location or in the user's favorites. If both decisions return affirmative results, a push notification such as those discussed with respect to FIGS. **21**A and **21**B is sent to the user at step **2540**. Otherwise the overall process terminates at step **2590**, and no notifications are sent to the user. Recall from discussion with respect to FIGS. **21**A and **21**B that when the user enables notifications, he or she may also set a notification filter to receive only a selected subset of all notifications. In the exemplary process shown in FIG. **25**, such notification filters are implemented in terms of distance and user favorites within step **2530**. For example, the user may choose to receive push notifications on sighting events occurring within a pre-defined radius of the user's current geolocation, where the pre-defined radius may be 1 mile, 2.5 miles, 10 miles, or the like. In some other embodiments, alternative filtering conditions such as types of news source and source credibility thresholds may be implemented instead in step **2530**.

While FIG. **24** covers the process of retrieving user reports of celebrity sightings from social media websites, FIG. **25** covers the process of sending notifications of celebrity sightings added to the VELVET ROPES sightings database. However, celebrity sightings in FIG. **25** refer to not only those added through the process shown in FIG. **24**, but also those reported by users directly through the VELVET ROPES platform. User credibility and reporting reliability are therefore important usability measures for the VELVET ROPES system. Consequently, inventors of the present invention have created methods and systems for verifying user reported celebrity sightings and updating user credibility scores.

FIGS. **26**A and **26**B are a flow diagram **2600** for user sighting report verification, according to one embodiment of the present invention. In short, a non-reporting user may confirm a reported celebrity sighting event if the non-reporting user also happens to spot the same celebrity within a reasonable time frame and not far away from the reported sighting location. In some embodiments, all user-generated sighting reports need to be verified by at least another user. In some other embodiments, a sighting report may be added the system as a credible but unverified event, if the sighting is reported by a user with an acceptable credibility or trust score.

More specifically, as the VELVET ROPES systems receives a user sighting report at step **2605** after initialization at step **2602**, the system checks whether the user can report celebrity sightings at step **2610**. In some embodiments, step **2610** involves the comparison of a user credibility score to a credibility threshold. In some other embodiments, step **2610** involves the comparison of the number of inaccurate sighting reports previously submitted by the user to a threshold value. If it is determined that the user cannot report celebrity sightings, the overall verification process terminates at step **2615**, and an error message is sent to notify the user that he or she has submitted too many inaccurate sighting reports, thus cannot participate further. If it is determined that the user can indeed report additional celebrity sightings, the verification process proceeds to step **2620**, where the user's credibility score based on previous sighting reports are examined.

For a user with a poor credibility score, the present sighting report is marked as "rumored" at step **2625**. To verify a rumored sighting report, at step **2660**, the VELVET ROPES server selects a random set of notification-enabled users within a pre-defined mileage radius around the reported sighting location. A verification request is then broadcasted, to inquire if users within the selected set have seen the reported celebrity too. At step **2670**, verification responses are received by the VELVET ROPES server and a ratio between the number of affirmative (yes) and negative (no) responses are computed, taking time elapsed into account at step **2675**. As time passes, the likelihood of receiving negative verification responses within a given time interval becomes higher, but the impact of a lower yes to no ratio on the user's credibility score would also decrease, for the reported celebrity may have already left the vicinity of the reporting area. Additional details on the computation of user credibility scores shall be described with reference to the Eqns. (1) and (2), and Table 1 hereafter.

At step **2675**, if the majority of responses is negative, the reporting user's credibility is reduced at step **2680**, and the overall process iterates again starting from step **2605** to examine the next user sighting report. On the other hand, if the majority of responses is affirmative, a sighting notification is broadcasted at step **2685** to all users who have enabled push notification services and are located within a pre-selected mileage radius around the reported sighting location. Such pre-define mileage radius may be set by the VELVET ROPES server or the receiving user. The reported sighting is correspondingly marked as verified at step **2685**. In addition, user credibility is increased within the system at step **2695**. In some embodiments, once a user's credibility level exceeds a specific threshold, all future sightings reported by the user would be considered a "credible unverified" sighting, and may or may not require additional verification by other non-reporting users.

Referring back to step **2620**, for a user with a good credibility score, the received celebrity sighting is marked as "unverified" at step **2635**. To verify the sighting report, at step **2640**, the VELVET ROPES server broadcasts a verification request to all notification-enabled users within a pre-defined mileage radius around the reported sighting location, to inquire if they have seen the reported celebrity as well. At step **2650**, verification responses are received by the VELVET ROPES server and a ratio between the number of affirmative (yes) and negative (no) responses are computed, taking time elapsed into account at step **2655**. If the majority of responses is negative, the reporting user's credibility is reduced at step **2680**, otherwise the reported sighting is marked as verified at step **2685** and the reporting user's credibility score is increased at step **2695**.

Although not shown explicitly in FIGS. **26**A and **26**B, in some embodiments, additional or alternative steps may be involved to consolidate multiple user reports of the same sighting event. For example, when multiple users report sightings of the same celebrity at around the same time and location, verification may or may not be necessary if at least one of the reporting users have a credibility score above a certain threshold. In addition, if the number of such user reports are large, it is possible to cross-verify with or without sending out additional verification requests to other non-reporting users. Lastly, it may be possible to broadcast only one set of verification request for multiple user reports of the

same sighting event, and credibility scores of all such reporting users may be updated with the same set of collected verification responses.

Since users do not always have a VELVET ROPES client application open at all times, a verification request may be ignored unintentionally. Thus, in some embodiments, instead of a dedicated verification request, a notification message with links within the application to a verification request and more other information is used instead. More specifically, for a user with poor credibility, a notification of the sighting event is broadcasted to a selected set of random users within a pre-selected mileage radius at step **2660**. Such a notification may contain a link to inquire whether a receiving user has seen the celebrity as well. Thus, the embedded verification request always reaches the targeted users, since such users are selected from those who have enabled push notifications within the system. Once verification responses are received at step **2670**, a ratio of affirmative and negative responses are computed at step **2675**. If the majority of response are affirmative, a sighting notification message is sent to the rest of the users within the pre-selected mileage radius. On the other hand, if the reporting user has good credibility, a sighting notification is always pushed out directly to all notification-enabled users within a pre-selected mileage at step **2640**, where the notification message links to a verification request in the form of a separate verification page, a pop-up window, an embedded line or button within the notification message itself, or the like. In this manner, a receiving user is less likely to turn off the notification function because he or she is overwhelmed with multiple messages regarding the same event.

In some embodiments, user credibility or trust score as described above is a numerical value in the range between 0 and 100,with a score of 100 indicating a high probability of the user reporting an accurate sighting. Each new user to the VELVET ROPES system may be assigned an initial credibility score, for example, a score of 50,and credibility updates may be made incrementally as time passes. Eqs. (1) and (2) below provide an illustrative example of how user credibility score may be computed. Other update functions are also possible.

In this particular embodiment, discrete variable t represents time elapsed since the user report has been received by the VELVET ROPES system, or since the sighting time; r[t] is a time-dependent rate of decay; Y[t] and N[t] are the respective number of affirmative(yes) and negative(no) verification responses received between t-1 and t; c[t] is a time-dependent credibility update value, summed over the elapsed time to obtain the updated credibility score C[t]. C_0 is an initial credibility score, set to a value between 0 and 100; t_0 is the starting time, while T is the time at which the credibility score is computed. Additionally, when the computed value of C[T] exceeds 100,a value of 100 is assigned to C[T]; when the computed value of C[T] falls below 0,a value of 0 is assigned to C[T] instead. This particular credibility score computation may be viewed as an exponentially weighted summation of verification response counts. Other exemplary credibility score updates may include linearly or non-linearly weighted summations.

$$c[t] = 100\left(\frac{Y[t]}{Y[t]+N[t]} - 0.5\right)(r[t])^t \quad \text{Eq. (1)}$$

-continued

$$C[T] = C_0 + \sum_{t=t_0}^{T} c[t] \quad \text{Eq. (2)}$$

Table 1 below provides an explicit numerical example of credibility score computation based on Eqs. (1) and (2). In this example, decay rate is set to the value of r[t]=1−0.02t; t_0 is set to 1,while T is set to 10; columns 3 and 4 within Table 1 list sample values for Y[t] and N[t]; credibility update c[t] shown in column 5 is computed according to Eq. (1). To compute user credibility score at T=10,Eq. (2) may be employed with C_0=50,leading to a sum of C[10]=71.67. Observe that the value of C[t] may be updated incrementally as more verification responses are received over individual time intervals. In various embodiments, the value of T may be set by the VELVET ROPES server. In other words, the server collects verification responses for a specific period of time, before updating the user's credibility score. The VELVET ROPES server may also set threshold values for use within the verification process shown in FIGS. **26**A and **26**B. For example, a user with a credibility score greater than or equal to 85 may have his or her reported sightings marked as "credible unverified" immediately upon reporting, a user with a credibility score lower than or equal to 30 may have his or her reported sighting marked as "rumored" immediately upon reporting, while a user with a credibility score between 30 inclusive and 85 non-inclusive may have his or her reported sighting marked as "unverified" instead.

TABLE 1

Individual User Credibility Computation Example

Time t	Rate of Decay r[t]	# of Yes Y[t]	# of No N[t]	Credibility Update c[t]
1	0.98	38	17	18.71
2	0.96	90	26	25.42
3	0.94	30	52	−11.14
4	0.92	28	19	6.86
5	0.90	44	60	−4.54
6	0.88	20	30	−4.64
7	0.86	90	42	6.33
8	0.84	2	6	−6.20
9	0.82	14	75	−5.74
10	0.80	7	31	−3.39

Celebrity Rating

An additional feature of the VELVET ROPES system is to receive user ratings for individual celebrities in terms of their general star power, popularity, influence, talent, bankability, or even notoriety, all based on current and/or historical rating data. Such a celebrity rating system enables the user to pick up on new and upcoming stars, to find celebrities who have been popular for extended periods of times, and to search for celebrities who are in trend for one or more particular reasons.

FIG. **27** is a set of exemplary screenshots showing several pages for celebrity rating, according to one embodiment of the present invention. Within page **2710**, which may be automatically evoked when a user logs into the VELVET ROPES system, an image of a celebrity such as Madonna is presented, and the user is asked to rate her star power from A to D, as an A-List, B-List, C-List or D-List star. In some embodiments, ratings may be polled for categories other than star power. For example, during the week leading up to award shows such as the Oscars or the American Music Awards, ratings may be polled for celebrities' fashion

senses. The celebrity being rated may be one of several randomly selected by the system and presented to the user. Such random selections may be based on different criteria such as user interest and preferences, or celebrity popularity rankings within the system. Moreover, in some embodiments, the user may choose to rate his or her favorite celebrities, or search by celebrity name to rate particular celebrities of interest. Page **2720** is an illustrative celebrity profile page for Tom Hiddleston, where a rating panel displays the current standing of Tom Hiddleston as an A-List celebrity. On the other hand, page **2730** is an illustrative ratings page, where the top-three rated celebrities of the week are presented, and links to separate celebrity lists are provided. Tapping on the A-List link within page **2730** leads to an A-List of the week page **2740**, showing celebrities who have been rated as A-List for the week, possibly with the celebrity receiving the most votes ranked first at the top.

Consider an example where a given celebrity such as Stephen Colbert is rated for star power. For any week or day, user votes are collected by the VELVET ROPES server, and a percentage computation may be performed. Table 2 below provides an explicit numerical example, where the majority of Stephen Colbert's votes have chosen him as an A-List celebrity. Thus, Stephen Colbert's current standing for the week may be reported as an A-List star. In some embodiments, the total number of votes for a given celebrity may also be taken into account. For example, if only 10 votes have been received for a particular celebrity over an entire week, the voting results may be dismissed, since for one, the sampling population is too small for the voting result to be of any significance. For two, a celebrity with only 10 user votes over an entire week is most-likely D-List, regardless of the percentage computation results. In some embodiments, the top-ranked celebrity in the list shown in Page **2740** may have the highest A-List percentage value or the largest number of A-List votes over all stars displayed therein.

TABLE 2

Celebrity Rating for the Week Computation Example

This Week's Voting	A-List	B-List	C-List	D-List	Total
Stephen Colbert in Latest Round	3109	1614	1119	1409	7251
Percentages	42.88%	22.26%	15.43%	19.43%	100%

While rating or voting results for any particular week or day may be determined through simple individual percentage computations or vote count comparisons followed by sorting over multiple celebrities, lifetime rating may require time-dependent weightings to emphasize on more recent ratings. For example, Eq. (3) below provides an A-List vote conversion example of how historical voting results may be decay-converted. In this embodiment, discrete variable t represents time passed since a set of voting results have been collected; r[t] is a time-dependent rate of decay; a[t] is the number of A-List votes received between t-1 and t; t_0 is the starting time, while T is the time at which the Lifetime rating is to be computed; A[t] is a time-dependent, decay-converted vote count, to be summed over the desired Lifetime between t_0 and T to obtain the total Lifetime A-List vote $R_A[T]$ for a given celebrity. Although not shown explicitly here, similar computations can be carried out for B-List, C-List, and D-List votes as well. This particular celebrity rating computation may be viewed as an exponentially weighted summation of user votes. Other exemplary celebrity rating updates may include linearly or non-linearly weighted summations, where user note counts may or may not be normalized.

$$R_A[T]=\Sigma_{t=t_0}^{T}A(t)=\Sigma_{t=t_0}^{T}a(t)(r[t])^t \quad \text{Eq. (3)}$$

Table 3 below provides an explicit numerical example of Lifetime A-List Vote conversion based on Eq. (3). In this example, decay rate is set to the value of r[t]=1−0.04t; t_0 is set to 1, while T is set to 12; column 3 within Table 3 lists sample values for Lifetime A-List votes a[t]; Lifetime decay-converted A-List votes A[t] shown in column 4 is computed as $a[t](r[t])^t$. At T=12, the total Lifetime A-List vote $R_A[T]$ is decay-converted to be 29307,instead of the direct sum of 61910. Similarly, total Lifetime B-List, C-List and D-List votes may be decay-converted, and a percentage computation may be performed to determine the Lifetime standing of the given celebrity. Table 4 shows an exemplary comparison between Lifetime votes directly summed and decay-converted votes computed according to Eq. (3). Thus, even though Stephen Colbert has historically more votes as a B-List star, the decay-converted votes reflects the fact that he may have received many more A-List votes recently. Thus, Stephen Colbert's Lifetime standing is taken as an A-List celebrity.

TABLE 3

Celebrity Rating Computation Example

Months Passed t	Rate of Decay b(t)	Lifetime A-List Votes a(t)	Lifetime A-List Votes Converted for Decay A(t)
1	1	5201	5201
2	0.96	9264	8538
3	0.92	7570	5895
4	0.88	9905	5940
5	0.84	7265	3038
6	0.80	42	11
7	0.76	1588	233
8	0.72	1847	133
9	0.68	7633	237
10	0.64	5829	67
11	0.60	3278	12
12	0.56	2488	2
Cumulative Sum		61910	29307

TABLE 4

Celebrity Lifetime Vote Comparisons

Stephen Colbert	A-List	B-List	C-List	D-List
Lifetime Votes	61910	73960	51055	57794
Decay-Converted Lifetime Votes	29307	26895	23072	16979

Client Application on Non-Limited Displays

FIGS. **28** and **29** are illustrative screenshots of the VELVET ROPES system when presented to the user on a non-limited display, according to one embodiment of the present invention. A non-limited display refers to a comparatively large screen, such as used on a desktop computer or a tablet. FIG. **28** is a celebrity places page **2800** similar to celebrity places page **600** shown in FIG. **6**. In this example, the VELVET ROPES system is accessed through a web portal, with a web address presented in address bar **2805**. Navigation panel **2820** contains a row of clickable tabs, while user icon **2810** provides access to user profile and setting information. Map panel **2830** shows a map area around a current user geolocation, while thumbnail listings such as **2850** provides summary information on each celeb-

rity place shown within map panel **2830**. In addition, filter icon **2860** allows the user to filter the displayed celebrity places, while tour icon **2870** enables the user to select a pre-defined or customized celebrity places tour. FIG. **29** is a tours page **2900** similar to page **700** shown in FIG. **7**, and each entry within tour list **2950** covers a different set of celebrity places.

CONCLUSIONS

One of ordinary skill in the art knows that the use cases, structures, schematics, and flow diagrams may be performed in other orders or combinations, but the inventive concept of the present invention remains without departing from the broader spirit of the invention. Every embodiment may be unique, and methods/steps may be either shortened or lengthened, overlapped with the other activities, postponed, delayed, and continued after a time gap, such that every user is accommodated to practice the methods of the present invention.

The present invention may be implemented in hardware and/or in software. Many components of the system, for example, network interfaces etc., have not been shown, so as not to obscure the present invention. However, one of ordinary skill in the art would appreciate that the system necessarily includes these components. A user-device is a hardware that includes at least one processor coupled to a memory. The processor may represent one or more processors (e.g., microprocessors), and the memory may represent random access memory (RAM) devices comprising a main storage of the hardware, as well as any supplemental levels of memory e.g., cache memories, non-volatile or back-up memories (e.g. programmable or flash memories), read-only memories, etc. In addition, the memory may be considered to include memory storage physically located elsewhere in the hardware, e.g. any cache memory in the processor, as well as any storage capacity used as a virtual memory, e.g., as stored on a mass storage device.

The hardware of a user-device also typically receives a number of inputs and outputs for communicating information externally. For interface with a user, the hardware may include one or more user input devices (e.g., a keyboard, a mouse, a scanner, a microphone, a web camera, etc.) and a display (e.g., a Liquid Crystal Display (LCD) panel). For additional storage, the hardware my also include one or more mass storage devices, e.g., a floppy or other removable disk drive, a hard disk drive, a Direct Access Storage Device (DASD), an optical drive (e.g. a Compact Disk (CD) drive, a Digital Versatile Disk (DVD) drive, etc.) and/or a tape drive, among others. Furthermore, the hardware may include an interface with one or more networks (e.g., a local area network (LAN), a wide area network (WAN), a wireless network, and/or the Internet among others) to permit the communication of information with other computers coupled to the networks. It should be appreciated that the hardware typically includes suitable analog and/or digital interfaces to communicate with each other.

In some embodiments of the present invention, the entire system can be implemented and offered to the end-users and operators over the Internet, in a so-called cloud implementation. No local installation of software or hardware would be needed, and the end-users and operators would be allowed access to the systems of the present invention directly over the Internet, using either a web browser or similar software on a client, which client could be a desktop, laptop, mobile device, and so on. This eliminates any need for custom software installation on the client side and increases the flexibility of delivery of the service (software-as-a-service), and increases user satisfaction and ease of use. Various business models, revenue models, and delivery mechanisms for the present invention are envisioned, and are all to be considered within the scope of the present invention.

The hardware operates under the control of an operating system, and executes various computer software applications, components, programs, codes, libraries, objects, modules, etc. indicated collectively by reference numerals to perform the methods, processes, and techniques described above.

In general, the method executed to implement the embodiments of the invention, may be implemented as part of an operating system or a specific application, component, program, object, module or sequence of instructions referred to as "computer program(s)" or "computer code(s)." The computer programs typically comprise one or more instructions set at various times in various memory and storage devices in a computer, and that, when read and executed by one or more processors in a computer, cause the computer to perform operations necessary to execute elements involving the various aspects of the invention. Moreover, while the invention has been described in the context of fully functioning computers and computer systems, those skilled in the art will appreciate that the various embodiments of the invention are capable of being distributed as a program product in a variety of forms, and that the invention applies equally regardless of the particular type of machine or computer-readable media used to actually effect the distribution. Examples of computer-readable media include but are not limited to recordable type media such as volatile and non-volatile memory devices, floppy and other removable disks, hard disk drives, optical disks (e.g., Compact Disk Read-Only Memory (CD ROMS), Digital Versatile Disks, (DVDs), etc.), and digital and analog communication media.

Although the present invention has been described with reference to specific exemplary embodiments, it will be evident that the various modification and changes can be made to these embodiments without departing from the broader spirit of the invention. Accordingly, the specification and drawings are to be regarded in an illustrative sense rather than in a restrictive sense. It will also be apparent to the skilled artisan that the embodiments described above are specific examples of a single broader invention which may have greater scope than any of the singular descriptions taught. There may be many alterations made in the descriptions without departing from the spirit and scope of the present invention.

What is claimed is:

1. A system for generating a tour on a digital celebrity map, and for verifying a celebrity sighting event, comprising:

a server connected to a network, the server having access to at least one processor and a data repository, the server including a non-transitory physical medium; and

a plurality of program codes stored on the non-transitory physical medium, the program code, when executed, causing the processor to:

establish a client server connection between the server and a computing appliance operated by at least one user;

receive at least one celebrity sighting event by:

receive a celebrity image from an image source, wherein the image source is selected from a first group consisting of a digital image source and a reporting user upload;

associate the celebrity image with a first named celebrity;

determine a sighting location and a sighting time associated with the celebrity image, wherein the first named celebrity, the sighting location, and the sighting time constitute a celebrity sighting event, and wherein the celebrity image is associated with the celebrity sighting event;

receive a credibility rating for the celebrity image; and

update a credibility score of the image source according to the received credibility rating;

wherein an initial credibility rating score is set to an initial rating;

generate a celebrity tour by:

receive, from the computing appliance, a user geolocation;

determine a map area around the user geolocation;

retrieve, from the data repository, celebrity geolocations within the map area, wherein each celebrity geolocation is associated with at least one named celebrity, and wherein the celebrity geolocations comprise at least celebrity real estate properties, celebrity sighting locations, and celebrity hotspots;

transmit the celebrity geolocations to the computing appliance, for display on the digital celebrity map;

receive a request to generate a tour to the celebrity geolocations, wherein the tour starts from the user geolocation, and wherein the request is associated with a request time; and

in response to the request, generate for display on the digital celebrity map, the tour to the celebrity geolocations; and

verify the celebrity sighting event by:

determine whether the sighting location of the celebrity sighting event is within the map area, and whether the sighting time is within a given time window around the request time; and

in response to determining that the sighting location is within the map area, and the sighting time is within the given time window around the request time,

generate a notification of the sighting event to the at least one user;

receive a verification response from the at least one user, wherein the verification response is associated with a verification time; and

update the credibility score of the image source according to the verification response and a duration of time elapsed from the sighting time to the verification time.

2. The system of claim **1**, wherein the program code, when executed, further causes the processor to:

receive, from the user, at least one filtering criterion for filtering the celebrity geolocations, wherein the at least one filtering criterion is selected from a second group consisting of celebrity status, celebrity active period, celebrity rating, and celebrity geolocation type; and

in response to receiving the at least one filtering criterion, filter the celebrity geolocations according to the at least one filter criterion.

3. The system of claim **1**, wherein the program code, when executed, further causes the processor to:

receive a user selection of a travel mode;

determine the map area around the user geolocation by scaling according to the travel mode; and

generate the tour according to the travel mode.

4. The system of claim **1**, wherein each celebrity geolocation is associated with an avatar of the at least one named celebrity, for display on the digital celebrity map as a location marker.

5. The system of claim **1**, wherein the generated tour includes a graphical display of navigation directions.

6. The system of claim **1**, wherein the generated tour includes a profile for each celebrity geolocation.

7. The system of claim **1**, wherein the program code, when executed, further causes the processor to:

search digital media to find a currently-trending celebrity;

determine whether the currently-trending celebrity exists in the data repository; and

in response to determining that the currently-trending celebrity does not exist in the data repository, add the currently-trending celebrity to the data repository.

8. The system of claim **1**, wherein the program code, when executed, further causes the processor to:

determine whether the first named celebrity exists in the data repository; and

in response to determining that the first named celebrity exists in the data repository, determine whether the celebrity image exists in the data repository for the first named celebrity, wherein the celebrity image is associated with the first named celebrity in the data repository in response to determining that the celebrity image does not exist in the data repository for the first named celebrity.

9. The system of claim **8**, wherein the program code, when executed, further causes the processor to:

determine whether a second celebrity image is associated with a second named celebrity;

in response to determining that the second celebrity image is associated with a second named celebrity, determine whether the second named celebrity exists in the data repository; and

in response to determining that the second named celebrity does not exist in the data repository, add the second named celebrity to the data repository.

10. The system of claim **1**, wherein the credibility score of the image source is updated according to the verification response and the duration of time elapsed from the sighting time to the verification time through the following equations:

$$c[t] = 100\left(\frac{Y[t]}{Y[t]+N[t]} - 0.5\right)(r[t])^t,$$

$$C[T] = C_0 + \sum_{t=t_0}^{T} c[t],$$

wherein r[t] is a time-dependent rate of decay, Y[t] and N[t] are numbers of affirmative and negative verification responses received between time t−1 and t, including the verification response from the at least one user, c[t] is a time-dependent credibility update value, summed over a time elapsed between the sighting time and a response time for each verification response, C_0 is an initial credibility score, set to a value between 0 and 100, t_0 is starting time, T is time at which the credibility score is computed, and C[T] is an updated credibility score.

11. A method for generating a tour on a digital celebrity map, the method executable from a non-transitory storage medium storing executable program code thereon, the method comprising:

establishing a client server connection between a server and a computing appliance operable by at least one user, the server having access to at least one processor and a data repository;

receiving at least one celebrity sighting event by:

receiving a celebrity image from an image source, wherein the image source is selected from a first group consisting of a digital image source and a reporting user upload;

associating the celebrity image with a first named celebrity;

determining a sighting location and a sighting time associated with the celebrity image, wherein the first named celebrity, the sighting location, and the sighting time constitute a celebrity sighting event, and wherein the celebrity image is associated with the celebrity sighting event;

receiving a credibility rating for the celebrity image; and

updating a credibility score of the image source according to the received credibility rating;

wherein an initial credibility rating score is set to an initial value;

generating a celebrity tour by:

receiving, from the computing appliance, a user geolocation;

determining a map area around the user geolocation;

retrieving, from the data repository, celebrity geolocations within the map area, wherein each celebrity geolocation is associated with at least one named celebrity, and wherein the celebrity geolocations comprise at least celebrity real estate properties, celebrity sighting locations, and celebrity hotspots;

transmitting the celebrity geolocations to the computing appliance, for display on the digital celebrity map;

receiving a request to generate a tour to the celebrity geolocations, wherein the tour starts from the user geolocation; and

in response to the request, generating for display on the digital celebrity map, the tour to the celebrity geolocations; and

verifying the celebrity sighting event by:

determining whether the sighting location of the celebrity sighting event is within the map area, and whether the sighting time is within a given time window around the request time; and

in response to determining that the sighting location is within the map area, and the sighting time is within the given time window around the request time,

generating a notification of the sighting event to the at least one user;

receiving a verification response from the at least one user, wherein the verification response is associated with a verification time; and

updating the credibility score of the image source according to the verification response and a duration of time elapsed from the sighting time to the verification time.

12. The method of claim **11**, further comprising:

receiving, from the user, at least one filtering criterion for filtering the celebrity geolocations, wherein the at least one filtering criterion is selected from a second group consisting of celebrity status, celebrity active period, celebrity rating, and celebrity geolocation type; and

in response to receiving the at least one filtering criterion, filtering the celebrity geolocations according to the at least one filter criterion.

13. The method of claim **11**, further comprising:

receiving a user selection of a travel mode;

determining the map area around the user geolocation by scaling according to the travel mode; and

generating the tour according to the travel mode.

14. The method of claim **11**, wherein each celebrity geolocation is associated with an avatar of the at least one named celebrity, for display on the digital celebrity map as a location marker.

15. The method of claim **11**, wherein the generated tour includes a graphical display of navigation directions.

16. The method of claim **11**, wherein the generated tour includes a profile for each celebrity geolocation.

17. The method of claim **11**, further comprising:

searching digital media to find a currently-trending celebrity;

determining whether the currently-trending celebrity exists in the data repository; and

in response to determining that the currently-trending celebrity does not exist in the data repository, adding the currently-trending celebrity to the data repository.

18. The method of claim **11**, further comprising:

determining whether the first named celebrity exists in the data repository; and

in response to determining that the first named celebrity exists in the data repository, determining whether the celebrity image exists in the data repository for the first named celebrity, wherein the celebrity image is associated with the first named celebrity in the data repository in response to determining that the celebrity image does not exist in the data repository for the first named celebrity.

19. The method of claim **18**, further comprising:

determining whether a second celebrity image is associated with a second named celebrity;

in response to determining that the second celebrity image is associated with a second named celebrity, determining whether the second named celebrity exists in the data repository; and

in response to determining that the second named celebrity does not exist in the data repository, adding the second named celebrity to the data repository.

20. A non-transitory storage medium storing executable program code for generating a tour on a digital celebrity map, the program code when executed, causing a processor to perform steps for:

establishing a client server connection between a server and a computing appliance operated by at least one user, the server having access to at least one processor and a data repository;

receiving at least one celebrity sighting event by:

receiving a celebrity image from an image source, wherein the image source is selected from a group consisting of a digital image source and a reporting user upload;

associating the celebrity image with a first named celebrity;

determining a sighting location and a sighting time associated with the celebrity image, wherein the first named celebrity, the sighting location, and the sighting time constitute a celebrity sighting event, and wherein the celebrity image is associated with the celebrity sighting event;

receiving a credibility rating for the celebrity image; and

updating a credibility score of the image source according to the received credibility rating;

wherein an initial credibility rating score is set to an initial value;

generating a celebrity tour by:

receiving, from the computing appliance, a user geolocation;

determining a map area around the user geolocation;

retrieving, from the data repository, celebrity geolocations within the map area, wherein each celebrity geolocation is associated with at least one named celebrity, and wherein the celebrity geolocations comprise at least celebrity real estate properties, celebrity sighting locations, and celebrity hotspots;

transmitting the celebrity geolocations to the computing appliance, for display on the digital celebrity map;

receiving a request to generate a tour to the celebrity geolocations, wherein the tour starts from the user geolocation, and wherein the request is associated with a request time; and

in response to the request, generating for display on the digital celebrity map, the tour to the celebrity geolocations; and

verifying the celebrity sighting event by:

determining whether the sighting location of the celebrity sighting event is within the map area, and whether the sighting time is within a given time window around the request time; and

in response to determining that the sighting location is within the map area, and the sighting time is within the given time window around the request time,

generating a notification of the sighting event to the at least one user;

receiving a verification response from the at least one user, wherein the verification response is associated with a verification time; and

updating the credibility score of the image source according to the verification response and a duration of time elapsed from the sighting time to the verification time.

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